

## Comparison of emotional intelligence, alexithymia, and thought-action fusion among Patients with Generalized Anxiety Disorder and Normal Individuals

DOI: [10.22098/JPC.2024.14326.1202](https://doi.org/10.22098/JPC.2024.14326.1202)

Behzad Malehmir<sup>1\*</sup>; Fatemeh Safarpour<sup>2</sup>; Mahtab Baharvand<sup>3</sup>; Fatemeh Gohari<sup>4</sup>

<sup>1</sup> PhD student in psychology, University of Mohaghegh Ardabili, Ardabil, Iran. **Corresponding Author:** [behzadpsycho4@gmail.com](mailto:behzadpsycho4@gmail.com)

<sup>2</sup> Masters student of Clinical Psychology, Faculty of Psychology and Education, Kharazmi University, Tehran, Iran.

<sup>3</sup> M.A School Counseling, Counseling Department, Allameh Tabataba'i University, Iran

<sup>4</sup> Master rehabilitation counseling, Counseling Department, University of Mohaghegh Ardabili, Ardabil, Iran.

### Abstract

**Aim:** Emotional and cognitive components such as emotional intelligence, Alexithymia, and thought-action fusion have a significant impact on generalized anxiety disorder, and the above components are considered to be the main factors in the creation and continuation of this disorder. Therefore, the present study aimed to compare emotional intelligence, Alexithymia, and thought-action fusion in patients with generalized anxiety disorder and normal people. **Method:** The present study was descriptive and causal-comparative in terms of its fundamental purpose and data collection method. The statistical population of the research was all generalized anxiety patients who were referred to specialized psychiatry and counseling clinics in Qazvin city in the spring and summer of 2023, who were diagnosed with generalized anxiety disorder by specialists. From this statistical population, 50 people with Generalized Anxiety Disorder and 50 normal people were selected by the available sampling method. instruments for data gathering were Bar-N's Emotional Intelligence (1980), Toronto Alexithymia Questionnaire (1994), and Rachman and Shafran's Thought-Action Fusion Questionnaire (1998). Data were analyzed using SPSS-25 software and multivariate analysis of variance (MANOVA). **Findings:** The results showed that there is a significant difference between emotional intelligence, Alexithymia, and thought-action fusion in patients with generalized anxiety disorder and normal people. **Conclusion:** Therefore, The results showed that the scores of emotional ataxia and thought-action fusion in people with generalized anxiety disorder are higher than those of normal people, but the score of emotional intelligence in normal people is higher than that of people with generalized anxiety disorder. This finding has important implications for the pathology of generalized anxiety disorder. Accordingly, professionals can use these results for the prevention and treatment of generalized anxiety disorder.

**Keywords:** emotional intelligence, alexithymia, thought-action fusion, generalized anxiety disorder.



## Introduction

Generalized anxiety disorder is characterized by recurrent negative thinking in the form of uncontrollable worry about possible future dangers that last most days and for at least six months and is difficult to control, as well as psychological symptoms such as pathological worry, anxiety, sense of threat, and restlessness, irritability, sleep disturbance, and tension as well as physical symptoms such as palpitations, dry mouth, and sweating are diagnosed (American Psychiatric Association, 2022). In the studies conducted in Iran, the prevalence of this disorder has been reported as 20/6 % (Rashtbari, Dadashi, Vakili and Maliki-zadeh, 2018) and in addition, the lifetime prevalence of generalized anxiety disorder in the general population is approximately 5-6% (Vitchen, 2002). Also, this disorder is associated with difficulty in daily functioning and predicts a high risk of future psychological problems (Tempesta et al., 2013).

Emotions are one of the important psychological factors that play a decisive role in the formation and continuation of psychological disorders. In this context, the results of the studies indicate that people who have less emotional intelligence experience more anxiety symptoms and people with generalized anxiety disorder get lower marks in the subscales of emotional intelligence (Ku, Liu, Wu, Yeh, Tisai and Yen, 2021 and Lani, Quinto, Lariola, Crasta, & Pazzi, 2019). Emotional intelligence includes a set of competencies, skills, and facilitators that allow a person to understand themselves and others, communicate more effectively with them, and be able to respond to situations they encounter on a daily basis. According to the Bar-An model, emotional intelligence includes 10 key components: self-awareness, interpersonal relationships, impulse control, problem-solving, emotional self-awareness, flexibility, reality testing, stress tolerance, assertiveness, and empathy (Bar-An, 2006). In the study of Gore et al. (2019), the results showed that people with generalized anxiety disorder scored lower than normal people in the variable of emotional intelligence, as a result, they have lower emotional intelligence. In Sowell's study (2021), it was shown that people with mental health had higher emotional intelligence; However, people with generalized anxiety disorder had lower emotional intelligence. Also, Ko et al. (2021), Elahjan et al. (2020) and Farqani et al. (2020) reported in their studies that people with generalized anxiety disorder scored lower in subscales of emotional intelligence and had less emotional intelligence. In addition, Ayala Servin (2021) in a study showed that there was a significant relationship between emotional intelligence and average levels of anxiety. In another study, Lani et al. (2019) showed that emotional intelligence had a negative relationship with generalized anxiety disorder symptoms.

On the other hand, several studies have reported that 30 to 46% of people with anxiety disorders, especially generalized anxiety disorder, may experience alexithymia (Kumar, Avasti, and Grover, 2018; Panicia et al., 2018; Berardis et al., 2018). 2017; Son et al., 2012; Berardis et al., 2008). Alexithymia is characterized by problems such as recognition and expression of emotions, lack of fantasy life and inability to think in accordance with specific external events (Taylor, Bobby and Parker, 1999). People with alexithymia suffer from emotional dysregulation and inability to relieve and manage

their emotions due to lack of emotional awareness (Berardis et al., 2008). The structure of ataxia-emotion, compiled from clinical research, is multifaceted and includes four distinct features: 1) difficulty in identifying and describing emotions, 2) difficulty in distinguishing emotions from bodily sensations, 3) reduced imagination, and 4) concrete and at least introspective thinking. Berardis et al., (2008). Menin, Heimberg, Turk and Francesco (2005) showed that adults who met the diagnostic criteria of generalized anxiety disorders showed more intense emotional experience, more tendency to express negative emotions and less ability to soothe themselves after experiencing negative emotions. Also, people with generalized anxiety disorder experienced significant problems in the ability to identify, describe and clarify their emotional experiences. In Panisia et al.'s study (2018), people with generalized anxiety disorder showed significantly more alexithymia compared to the normal group. More precisely, in 46% of the people with generalized anxiety disorder, alexithymia was observed, while only 16% of the normal group were involved in emotional aphasia. Also, in the study of Kumar, Avasti and Grover (2018), about 40% of patients with generalized anxiety disorder had emotional aphasia. In this context, the results of the study by Basharat, Hafazi, Ranjbar Shirazi and Ranjbari (2017) showed that there is a significant difference between people with generalized anxiety disorder and normal people in emotional ataxia. On the other hand, emotional dyslexia can increase the risk of suicide in people with generalized anxiety disorder (Barardis et al., 2017). In addition to the mentioned studies, in the study of Onor, Alkin, Sheridan and Vince (2013), it was shown that people with generalized anxiety disorder scored lower in emotional intelligence and experienced more alexithymic compared to normal people.

Another factor that can play a significant role in the formation and continuation of generalized anxiety disorder is thought-action fusion. In explanation, although the fusion of thought and action has often been investigated in the context of obsessive-compulsive disorder (Jelink, Balzek, Moritz, Reininger, & Miguel, 2021; Inouzo, Bilger, & Track, 2021; Sinha, Mahur, Sharma, Mehta, & Agarwal, 2021; Lee et al., 2020; Kim and Lee, 2020; Hazel, Stewart, Reiman, and McNally, 2019; Male Mir, Kiwanlu, Rafiei Rad, Mozhez, Sadri, and Zavarei, 1400; Homayoun and Baghouli, 2018), but the evidence shows that this cognitive error can play a role in disorders other than obsessive-compulsive disorder, especially generalized anxiety disorder (Demirdogan, Serdangtaki, Sovilmis, Nin, Soyuz, & Yavuz, 2021; Gjelsvik et al., 2018; Henriques, 2017; Thompson-Holland, Fortune and Barlow, 2013; Shirinzade Dastgari, Natchiyan and Guderzi (2018). Pour Faraj Omran, Bakshipour and Alilou, 2017). Thought-action fusion refers to the misinterpretation of the importance of intrusive and unwanted thoughts (Shafran, Tordarson, & Rachman, 1996). People who experience thought-action fusion believe that thinking about unacceptable thoughts is equivalent to acting on them, and that thinking about an aversive event increases the likelihood of its occurrence (Shafran et al., 1996). In Demirdogan et al.'s (2021) study, high levels of thought-action fusion were associated with higher levels of anxiety symptoms. As a result, thought-action fusion problems can have an increasing effect on anxiety. Another study has also shown that the fusion of thought and action is related to generalized anxiety disorder and health anxiety and can predict generalized anxiety disorder

(Henrix, 2017). In this context, Thompson-Hollando colleagues (2013) also showed in their study that the presence of generalized anxiety disorder was unexpectedly the strongest predictor of the possibility of thought-action fusion. In Shirinzadeh et al.'s study (2018), the results indicated that the amount of thought-action fusion in people with generalized anxiety disorder was higher than in other normal and abnormal groups. Also, Pour Faraj Omran, Bakshipour and Alilou (2017) showed in a study that the level of thought-action fusion was higher in people with generalized anxiety disorder than in the normal group. The results of the Qamari et al study (2012) showed that The results also indicated that the construct of TAF is not specific to OCD and it is present in major depression disorders too. Moreover, moral TAF had high levels of OCD and Major Depression Disorder.

According to the above, generalized anxiety disorder is a very common and destructive anxiety disorder, which is of great importance due to its connection with various types of psychopathology (Simon, Hollander, Rathbaum, and Stein, 2020; Vichen, 2002) and is influenced by There are various factors such as emotional intelligence, emotional ataxia, and thought-action fusion. Although most anxiety disorders develop in late childhood, the average age of onset of generalized anxiety disorder is in adulthood (Kessler, Berglund, Demler, Jane, Merikangas, & Walters, 2005). Accordingly, it is very important to pay attention to this disorder and its related factors in adulthood. However, the research conducted in this field is not sufficient and the need for more research is evident. In this regard, the present study was conducted to compare emotional intelligence, emotional ataxia, and thought-action fusion in patients with generalized anxiety disorder and the normal population.

### Methods

The present study is descriptive and causal-comparative in terms of its fundamental purpose and data collection method. The statistical population of this research includes all patients with a generalized anxiety disorder who were referred to several specialized psychiatric and counseling clinics in Qazvin city and ordinary people in the spring and summer of 1402 who received a diagnosis of generalized anxiety disorder based on scales of Diagnostic and Statistical Manual of Mental Disorder (DSM-V-TR). From this statistical population, there were 50 patients with generalized anxiety disorder based on the diagnosis of experts and 50 normal people based on clinical interviews, who were selected based on the available sampling method. In causal-comparative studies, at least 15 people are suggested for each group, but to increase the validity and reliability of the results, 50 people were selected from each group. The criteria for entering the research included willingness to participate in the research, age over 18 years, having minimum literacy and not having any other co-occurring disorder, and the criteria for exit included non-cooperation or lack of motivation and substance abuse.

### Instrument

### 1- Bar-N- Emotional Intelligence Questionnaire

The present questionnaire was created by Bar-N in 1980 with the question "Why are some people more successful than others in life" and has 90 items. The questionnaire was graded on a 5-point Likert scale from 5 to 1 (I completely agree: 5 and I completely disagree: 1) and some questions were scored in reverse. This scale consists of 15 components, which include: 1- problem solving, 2- happiness, 3- independence, 4- tolerance of mental pressure, 5- self-control or impulse control, 6- emotional self-awareness, 7- self-actualization, 8- realism, 9- interpersonal relationships, 10- optimism, 11- self-respect, 12- flexibility, 13- responsibility (social), 14- empathy, 15- self-expression. Each subscale has 6 questions. The minimum score is 6, the maximum score is 30, and the median is 18, and for the entire exam, the minimum score is 90, the maximum is 450, and the median is 270. The higher a person's score is in the whole test or in each of the subscales, it is the proof of the person's superiority in that dimension of emotional intelligence (Dejkam, 2012). The reliability and validity of the emotional intelligence test was studied among the students of Tehran University, and by using the Cronbach's alpha method, it was found to be 0.92 for the reliability of the whole questionnaire, which indicates the high reliability of the questionnaire (Lashgari, 2011). In another research, the reliability of the Baran questionnaire was obtained using Cronbach's alpha of 0.62 (Dejkam, 2011). Petrides and Farnham (2001) estimated the internal consistency of the present questionnaire to be 0.86. In the research of Ahmadi Azghandi, Frost Mimar, Tagvi and Abolhasani (2005), the validity of this questionnaire was estimated using Cronbach's alpha method from 0.76 to 0.88. Also, in the present study, Cronbach's alpha method was used to determine the validity, and the coefficient for the entire questionnaire was 0.81 for the entire questionnaire.

### 2- Toronto alexithymia scale (tas)

Toronto alexithymia scale (Bagby, Parker and Taylor, 1994) has 20 items. And based on a 5-point Likert scale (1 completely disagree, 2 disagree, 3 have no opinion, 4 agree and 5 completely agree) is graded. This scale consists of three subscales (identifying emotions, difficulty in describing emotions and objective thinking). The validity of the scale of alexithymia was confirmed by its creators. The psychometric properties of the Toronto alexithymia Scale have been investigated and confirmed in several studies (Parker, Taylor, & Bagby, 2003; Palmer, Gigance, Manuka, & Staff, 2004). Its reliability was obtained using Cronbach's alpha coefficient by Bagby and others (1994), 0.87. In Iran, by Basharat (2007), the norm and validity using Cronbach's alpha method for the whole scale was 0.75, for difficulty in recognizing emotions 0.72, difficulty in describing emotions 0.72, and thinking with external orientation was 0.69. In the current study, Cronbach's alpha reliability for objective thinking was 0.83, difficulty in identifying emotions was 0.87, and difficulty in describing emotions was 0.91. Also, the reliability of this scale in the present study was estimated at 0.80 using Cronbach's alpha method.

### 3- Scale integration of thought and action (TAF)

This scale was created by Rachman and Shafran (1998) to measure the degree of fusion of thought and action. It has 19 items. The scoring of the questionnaire is considered in the form of a 5-point Likert scale of (0 strongly disagree, 1 disagree, 2 have no opinion, 3 agree, 4 strongly agree). This scale consists of 3 factors: 1- Integration of thought-moral action 2- Integration of thought-action is a possibility for others 3- Integration of thought-action is a possibility for oneself. In a research, the retest reliability coefficients for the whole scale were estimated at 0.61 and for the subscales from 0.59 to 0.63 (Bakhshipour and Kazemi Rezaei, 2017). Also, this questionnaire has concurrent and criterion validity (Shafran and Tordson, 1996).

### Procedure

To carry out the present study, after making preliminary arrangements with the officials of specialized psychiatric and counseling clinics in Qazvin city, the researcher went to these centers for sampling and after initial agreements and getting their consent for cooperation, the conditions and characteristics of the sample people needed for the research They were told. Then, the researcher spoke with each of the introduced patients after reviewing their case, and after obtaining their consent to cooperate in the research, an interview was conducted with them based on the DSM-V-TR criteria. After conducting the interview and confirming the psychiatrist's diagnosis, the researcher was given the questionnaires for them to complete. The patients completed the questionnaires in the presence of the researcher, and in case of ambiguity, the ambiguity was resolved with the researcher's explanations. The criteria for entering the normal group were not having a history of seeing a psychiatrist or psychologist, not being diagnosed with generalized anxiety disorder based on a clinical interview before entering the study, and not taking psychiatric drugs. To analyze the data in the descriptive statistics section, the report of frequency, mean and standard deviation was used, as well as to check the proposed hypotheses, the method of inferential statistics tests, and multivariate analysis of variances (manova) was used with the help of spss-25 software.

### Results

100 people participated in this research, 50 people had generalized anxiety disorder and 50 people were healthy, whose age average and standard deviation were  $(36.51 \pm 8.27)$  and  $(32.7 \pm 7.91)$  respectively. 33) was Other demographic variables were as follows: 74 (74%) of the participants were female and 26 (26%) were male. Regarding marital status, the research showed that 38 people (38%) were single and 62 people (62%) were married. Also, the educational status of the subjects showed that 45 people (45%) had a bachelor's degree, 53 people (53%) had a master's degree, and 2 people (2%) had a doctorate. Table 1 shows the descriptive statistics of the variables of emotional intelligence, alexithymia, and thought-action fusion related to the subjects.

**Table 1:** Table of Demographic features of two groups of subjects

Variable	anxiety patient's	N=50	healthy people	N=50
	M	SD	M	SD
Emotional intelligence	17	5/56	24/22	7/60
Alexithymia	48/02	12/67	41/88	10/36
Thought-Action fusion	136/68	16/17	109/42	14/40

Table 1 shows the mean and standard deviation of the variables of emotional intelligence, alexithymia, and thought-action fusion in two groups of anxiety patients and healthy people. The results indicate that the average scores of the anxious group in the variables of alexithymia and thought-action fusion are higher than the group of normal people, but in the variable of emotional intelligence, the score of the anxious group is lower than that of normal people. To check the significance of the differences, a multivariate analysis of variance was used. Before using the multivariate analysis of variance test, its presuppositions were checked. To evaluate the normality of the data, the Kolmogorov-Smirnov test was used, and the results showed that the scores of the variables had a normal distribution ( $p < 0.05$ ).

M-box and Levin tests can be mentioned among the assumptions of multivariate variance analysis. Based on the box test ( $p = 0.103$ ,  $\text{boxm} = 99.28$ ), the assumption of homogeneity of the covariance matrix of two groups of anxiety patients and healthy people in the research variables is confirmed. Also, the results of Levin's test showed that the variances of the two groups in emotional intelligence, emotional ataxia, and thought-action fusion at the community level were equal. The results of Levin's test are shown in Table 2.

**Table 2:** The results of Levine's test to check the equality of error variances in the post-test of the variables of emotional intelligence, alexithymia, and thought-action fusion.



Comparison of emotional intelligence, alexithymia, and thought-action fusion among Patients with Generalized Anxiety Disorder and Normal Individuals

<b>Variables</b>	<b>F statistics</b>	<b>dfb</b>	<b>dfw</b>	<b>P</b>
<b>Emotional intelligence</b>	0/704	1	98	0/504
<b>Alexithymia</b>	1/296	1	98	0/186
<b>Thought-Action fusion</b>	2/814	1	98	0/390

Since the presuppositions of multivariate variance analysis are established, the variance analysis test was performed. The results are shown in Table 3.

**Table 3:** Results of multivariate variance analysis of the difference between the two participant groups in the variables of emotional intelligence, emotional ataxia, and thought-action fusion.

	<b>Value</b>	<b>F</b>	<b>P</b>	<b>ETA</b>
<b>Pillai Trace</b>	0/704	9/25	0/001	0/704
<b>Wilks Lambda</b>	0/296	9/25	0/001	0/704
<b>Hotellings Trace</b>	2/814	9/25	0/001	0/704
<b>Roys largest Root</b>	2/814	9/25	0/001	0/704

In Table 3, the results of multivariate analysis of variance can be seen on the variables of emotional intelligence, emotional ataxia, and thought-action fusion. As the results of this table show, the Pillai test with a value of 0.704, Wilks's lambda with a value of 0.296, the Hotelling effect with a value of 2.814, and the largest square root with a value of 2.814 and the value of f is equal to 9.25 and The significance level obtained is 0.001 and they are statistically significant. The significance levels of the tests indicate that there is a significant difference between the two groups of anxiety patients and normal people in terms of the scores of the variables of emotional intelligence, alexithymia, and thought-action fusion.

**Table 4:** The results of multivariate analysis of variance to determine the difference between the two groups in the variables of emotional intelligence, alexithymia, and thought-action fusion.

Source	variable	SS	DF	MS	F	P	ETA
Group	Emotional intelligence	5683/31	1	5683/31	24/22	0/001	0/34
Group	Alexithymia	655/77	1	655/77	14/77	0/001	0/29
Group	Thought-action fusion	1320/71	1	1320/71	9/85	0/002	0/18

Based on Table 4, the results of multivariate analysis of variance show a statistically significant difference between the two groups of general anxiety patients and normal people in the variables of emotional intelligence ( $f=24.22$  and  $p<0.01$ ), alexithymia ( $14.77=f$  and  $p>0.01$ ) and thought-action fusion ( $f=9.85$  and  $p>0.01$ ).

## Discussion

The aim of the present study was to compare emotional intelligence, emotional dyslexia and thought-action fusion in patients with generalized anxiety disorder and the normal population. The results showed that there is a significant difference between the emotional dyslexia score of generalized anxiety patients and normal people, and the dyslexia scores of anxious people are higher than normal people. The result obtained with the research results of Besharat et al. (2017); Saslo et al. (2019), Sarno et al. (2018), Kumar et al. (2018), Bemonti et al. (2016) and Onor et al. (2013) are aligned. In explaining this finding, it can be said that people who are not able to understand, evaluate and regulate their emotions have a weak emotional coping style in response to stressful situations, which makes these people more prone to mental disorders, while

people who have higher levels of emotional understanding, regulate their emotions by using effective coping strategies and remain immune to psychological problems (Davis and Humphrey, 2017). To interpret these findings, we can pay attention to the relationship between emotional dyslexia and psychopathology. Some researches have confirmed the relationship between emotional awareness and psychological arousal of biological systems related to emotions. People with emotional dyslexia are unable to identify this process. Not being aware of emotions leads to intensification of emotional arousal (Bashart et al., 2017). In fact, it can be said that anxious people, unlike normal people who show an appropriate physiological reaction to the situation, the difficulty in differentiating emotions from each other and from bodily sensations makes the anxious person show their undifferentiated feelings with physiological reactions and increasing automatic responses to stress; These inappropriate physiological reactions (increased sympathetic responses and the hypothalamus-pituitary-adrenal axis) make the person feel their symptoms more intensely and lead to anxiety disorders (Saslo et al., 2019). In other words, ataxia prevents a person from distinguishing between sympathetic activity and subjective feelings, thereby making them susceptible to stress-related diseases (Polatos et al., 2019). Also, those people who do not have the capacity to recognize their own and other people's feelings and properly manage emotions in relationships with others against anxiety, use underdeveloped defense mechanisms and are unable to cope with stressful situations. Therefore, compared to normal people, they experience more anxiety symptoms (Sarno et al., 2018).

Another result of the research showed that emotional intelligence in people with general anxiety is lower than healthy people. According to the studies carried out, only Gore et al.'s research (2019) has compared the variable of emotional intelligence in these two groups, the results of which are in line with this study, but several studies have investigated the importance of emotional intelligence in anxiety and also the low level of emotional intelligence. In people with pervasive anxiety, Ko et al. (2021), Sovil (2021), Lani et al. (2021), Farqani Azroudi et al. (2020), Jan et al. (2020), Kosha et al. (2018), Bhat and Farooq (2017) agree. In explaining this finding, we can say; It seems that emotional intelligence, like a mechanism, increases a person's emotional ability and causes effective coping, which is effective in reducing the incidence of anxiety. In fact, better understanding and management of emotions in people who have higher emotional intelligence prevents the development of an incompatible emotional style that is related to mood and anxiety disorders. In fact, it can be said that emotional intelligence is related to two important areas of mood, i.e. positive emotions (feelings of pleasure, passion and interest, etc.) and negative emotions (anxiety, feelings of hostility and dissatisfaction, etc.). People with a negative mood tend to be more optimistic about their abilities due to the stability of their emotional experience, which may make it difficult to truly understand what they are feeling. And therefore, they evaluate themselves positively in terms of emotional capability, that is, emotional capabilities play an

effective role in identifying appropriate emotional responses, in facing everyday events, expanding the range of vision and creating a positive attitude about events and emotions. As a result, people who have the ability to recognize, control and use these emotional abilities will enjoy more social support, a sense of satisfaction and mental health (Gore et al., 2019). In general, people 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 (Kosha et al., 2018).

It can also be said that one of the important benefits is the ability to regulate emotions, improve negative emotions and cultivate pleasant and positive emotions. Therefore, people who are skilled in regulating their emotions have a greater ability to compensate for a negative emotional state by participating in pleasant activities, and emotional abilities play an important role in modulating anxiety and mental health. Some forms of emotional intelligence protect a person from anxiety and lead to better adaptation. For example, the ability to control emotions is related to the tendency to maintain a positive mood and leads to the prevention of anxiety states (Elahjan et al., 2020). In this regard, Ahmad Bhat and Farooq (2017) reported that people with psychological injuries have defects in recognizing and describing the difference between emotional stimuli. This means that these people are not able to use their emotional intelligence skills, and therefore, it is most likely that they use other methods that are less effective to manage their mood and mood, as a result, they are twice as likely to be anxious, depressed or become addicted and even have suicidal thoughts because scientists believe that if people have high emotional intelligence, they can better adapt to the problems and challenges of their lives and suffer less mental disorders.

The results showed that there is a significant difference between the thought-action fusion score of generalized anxiety patients and normal people, and the fusion scores are higher in anxious people than in normal people. The result obtained with the research results of Demirdogan et al. (2021), Shirinzade Dastgari et al. (2018); Henriques (2017), Morris et al. (2017), Abramoties et al. (2013), Thomas Holland et al. (2015) are aligned. Also, Porfaraj Imran and his colleagues (2017) reached the conclusion in their research that patients with general anxiety had a higher degree of thought-action fusion compared to normal people. In explaining this finding, it can be said that thought-action fusion is very similar to common metacognitive beliefs in people with generalized anxiety disorder; Because worry may affect the probability of occurrence of the events in which they are afraid. For example, if I worry about my health, I'm less likely to get sick. Also, the relationship between thought-action fusion scores and general anxiety diagnosis reflects the belief in some patients that worry can be an adaptive process and lack of worry leads to disaster because thought fusion is a state in which the boundary between thoughts and events and actions is blurred. Goes As a result, a person believes that his disturbing thoughts can affect the events of the outside world. Such a way of thinking leads to an increase in confusion, worry and anxiety in a person. As a result, a person is in a vicious cycle that starts with simple disturbing thoughts and eventually

leads to constant feelings of sadness, anxiety, restlessness, and various physiological states and problems (Shirinzadeh et al., 2018).

It seems that it can be said that anxiety disorders, including general anxiety, result from the activity of ineffective beliefs such as thought-action fusion. The consequence of such beliefs causes a person to accept them unconditionally without testing the validity of these beliefs in reality. In other words, the fear of causing anxiety causes pathological worry in the individual, and when asked about anxiety, patients with generalized anxiety disorder express the superstitious belief that worrying about something makes it less likely that something bad will happen. This magical thinking aspect of worry in gad is somewhat similar to the construct of thought-action fusion (Morris et al., 2017). The present study, like other studies, has limitations, such as the fact that only self-report tools were used to measure emotional dyslexia, emotional intelligence, and thought-action learning, and the types of anxiety disorders were not investigated separately. Considering the mentioned limitations, it is suggested that future studies use other tools such as interview and observation. Also, researchers can examine the relationship between the duration of the disease and the drugs used in patients with general anxiety with the aforementioned variables.

## Conclusion

The results of the present study showed that people with generalized anxiety disorder have more alexithymia and thought-action fusion than normal people and emotional intelligence is more common in healthy people than in people with generalized anxiety disorder.

## Disclosure Statements

The authors report no potential conflicts of interest.

## ORCID

0000-0002-5142-7448

## References

- Abramowitz, J. S., Whiteside, S., Lynam, D., & Kalsy, S. (2003). Is thought-action fusion specific to obsessive-compulsive disorder?: A mediating role of negative affect. *Behavior research and therapy*, 41(9), 1069-1079. [https://doi.org/10.1016/S0005-7967\(02\)00243-7](https://doi.org/10.1016/S0005-7967(02)00243-7)
- Ahmadi Azghandi, A., Taghavi, S. H., Ferasat Memar, F., & Abolhasani, A. (2006). The validity and reliability of Petrides and Furnham, 's trait emotional intelligence questionnaire. [https://jip.stb.iau.ir/article\\_512506.html?lang=en](https://jip.stb.iau.ir/article_512506.html?lang=en)

- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders, text revision (DSM-V). <https://www.psychiatry.org/psychiatrists/practice/dsm>
- Ayala-Servín, N. (2021). Emotional intelligence associated with levels of anxiety and depression in medical students of a public University. *An. Fac. Cienc. Méd.(Asunción)*, 51-60. <https://doi.org/10.18004/anales/2021.054.02.51>.
- Bagby, R. M., Parker, J. D., & Taylor, G. J. (1994). The twenty-item Toronto Alexithymia Scale—I. Item selection and cross-validation of the factor structure. *Journal of psychosomatic research*, 38(1), 23-32. [https://doi.org/10.1016/0022-3999\(94\)90005-1](https://doi.org/10.1016/0022-3999(94)90005-1)
- Bakhshipour, A., & Kazemi Rezayei, S. (2018). Comparison of Working Memory Capacity and Thought Control Strategies in Patients Obsessive-compulsive Disorder and Normal Subjects. *Journal of Modern Psychological Researches*, 12(48), 37-58. [dor 20.1001.1.27173852.1396.12.48.3.2](https://doi.org/10.27173852.1396.12.48.3.2)
- Bamonti, P. M., Heisel, M. J., Topciu, R. A., Franus, N., Talbot, N. L., & Duberstein, P. R. (2010). Association of alexithymia and depression symptom severity in adults aged 50 years and older. *The American Journal of Geriatric Psychiatry*, 18(1), 51-56. <https://doi.org/10.1097/JGP.0b013e3181bd1bfe>
- Bar-On, R. (2006). The Bar-On model of emotional-social intelligence (ESI) 1. *Psicothema*, 13-25. <https://doi.org/10.1177/026142940702300203>.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173. <https://doi.org/10.1016/j.jhrmr.1986.07.009>
- Berardis, D. D., Campanella, D., Nicola, S., Gianna, S., Alessandro, C., Chiara, C., ... & Ferro, F. M. (2008). The impact of alexithymia on anxiety disorders: a review of the literature. *Current Psychiatry Reviews*, 4(2), 80-86. <https://doi.org/10.2174/157340008784529287>
- Besharat, M. (2018). Alexithymia and defense mechanisms in patients with depression, generalized anxiety disorder, obsessivecompulsive disorders and normal individuals: A comparative study. [20.1001.1.17357462.1397.17.66.4.8](https://doi.org/10.17357462.1397.17.66.4.8)
- Besharat, M. (2008). Relation of alexithymia with ego defense styles. *Journal of fundamentals of mental health*, 10(39), 181-190. [doi: 10.22038/JFMH.2008.1673](https://doi.org/10.22038/JFMH.2008.1673)
- Bhat, S. A., & Farooq, T. (2017). The relationship of emotional intelligence with anxiety among students. *International Journal of Trend in Scientific Research and Development*, 1(6), 1216-1219. <http://dx.doi.org/10.2139/ssrn.2703944>.
- Dastgiri, S. S., Nateghian, S., & Goodarzi, M. A. (2010). Comparison of thought-action fusion beliefs among patients with obsessive-compulsive disorder, generalized anxiety disorder, and normal people. *Psychological Research*, 12(3-4), 97-111. [https://www.academia.edu/34859299/Comparing\\_of\\_Thought\\_Action\\_Fusion\\_TAF\\_and\\_Worry\\_between\\_Patients\\_with\\_GAD\\_pdf](https://www.academia.edu/34859299/Comparing_of_Thought_Action_Fusion_TAF_and_Worry_between_Patients_with_GAD_pdf)
- Davis, S. K., & Humphrey, N. (2012). The influence of emotional intelligence (EI) on coping and mental health in adolescence: Divergent roles for trait and ability

- El. Journal of adolescence, 35(5), 1369-1379.  
<https://doi.org/10.1016/j.adolescence.2012.05.007>.
- De Berardis, D., Serroni, N., Campanella, D., Marini, S., Rapini, G., Valchera, A., ... & Di Giannantonio, M. (2017). Alexithymia, suicide ideation, C-reactive protein, and serum lipid levels among outpatients with generalized anxiety disorder. *Archives of suicide research*, 21(1), 100-112.  
<https://doi.org/10.1080/13811118.2015.1004485>
- Dejkam N.(2011). Investigating the relationship between self-esteem and emotional intelligence in students of Islamic Azad University. Master's Thesis in Educational Psychology, Islamic Azad University.  
<https://jmums.mazums.ac.ir/article-1-970-en.pdf>
- Demirdogen, E. S., Serdengeçti, N., Sevilmis, I., Nane, C., Soyoz, E., & Yavuz, M. (2021). The Associations Between Attachment, Thought-Action Fusion, and Anxiety in Adolescents: Mediator Effect of Thought-Action Fusion. *Psychiatry Clin. Psychopharmacol*, 31, 303-309. DOI:10.5152/pcp.2021.21109.
- Gjelsvik, B., Kappelmann, N., von Soest, T., Hinze, V., Baer, R., Hawton, K., & Crane, C. (2018). Thought–Action Fusion in Individuals with a History of Recurrent Depression and Suicidal Depression: Findings from a Community Sample. *Cognitive therapy and research*, 42(6), 782-793.  
<https://doi.org/10.1007/s10608-018-9924-7>
- Gore, Alka D., Jadhav, Vinayak A., Israel, Mervin., Waghchavre, Vivek B.(2019). A Comparative Study of Emotional Intelligence and Stress, Depression, Anxiety between Medical and Engineering Students. *International Journal of Health Sciences & Research*, 9(6), 16-24.  
[https://www.ijhsr.org/IJHSR\\_Vol.9\\_Issue.6\\_June2019/3.pdf](https://www.ijhsr.org/IJHSR_Vol.9_Issue.6_June2019/3.pdf)
- Henricks, K. (2017). The Relationship Between Health Anxiety and Thought-Action Fusion. *Student Research Proceedings*, 2(1).<https://journals.macewan.ca/studentresearch/article/view/1382>
- Hezel, D. M., Stewart, S. E., Riemann, B. C., & McNally, R. J. (2019). Clarifying the thought-action fusion bias in obsessive-compulsive disorder. *Journal of Obsessive-Compulsive and Related Disorders*, 20, 75-84.  
<https://doi.org/10.1016/j.jocrd.2017.10.004>.
- Homayun, F., & Bagholi, H. (2020). Comparison of thought-action integration and attention control in patients with obsessive-compulsive disorders and depression. *Cognitive Analytical Psychology Quarterly*, 10(39), 27-38.[doi: 20.1001.1.28222476.1398.10.39.2.5](https://doi.org/10.1001.1.28222476.1398.10.39.2.5).
- Iani, L., Quinto, R. M., Lauriola, M., Crosta, M. L., & Pozzi, G. (2019). Psychological well-being and distress in patients with generalized anxiety disorder: The roles of positive and negative functioning. *PloS one*, 14(11), e0225646.  
<https://doi.org/10.1371/journal.pone.0225646>.
- Inozu, M., Bilekli Bilger, I., & Trak, E. (2021). The role of disgust proneness and contamination-related thought-action fusion in mental contamination-related

- washing urges. *Current Psychology*, 1-9. <https://doi.org/10.1016/j.brat.2005.09.011>.
- Jan, S. U., Anwar, M. A., & Warraich, N. F. (2020). The relationship between emotional intelligence, library anxiety, and academic achievement among the university students. *Journal of Librarianship and Information Science*, 52(1), 237-248. <https://doi.org/10.1177/0961000618790629>.
- Jelinek, L., Balzar, A., Moritz, S., Reininger, K. M., & Miegel, F. (2022). Therapists' Thought-Action Fusion Beliefs Predict Utilization of Exposure in Obsessive-Compulsive Disorder. *Behavior Therapy*, 53(1), 23-33. <https://doi.org/10.1016/j.beth.2021.05.004>.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of general psychiatry*, 62(6), 593-602. DOI: 10.1001/archpsyc.62.6.593
- Kim, J. E., & Lee, S. J. (2020). Thought-Action Fusion as Predictors of Obsessive-Compulsive Symptom Dimensions. *Psychiatry Investigation*, 17(12), 1226. doi: 10.30773/pi.2020.0292
- Ko, C. H., Liu, T. L., Wu, H. C., Yeh, Y. C., Tsai, W. X., & Yen, J. Y. (2021). Psychiatric comorbidities and emotional intelligence in internet gaming disorder: Attention deficit hyperactivity disorder, major depressive disorder, generalized anxiety disorder, and social anxiety disorder. *Psychiatry and Clinical Neurosciences*, 75(11), 352-354. <https://doi.org/10.1111/pcn.13295>
- Kousha, M., Bagheri, H. A., & Heydarzadeh, A. (2018). Emotional intelligence and anxiety, stress, and depression in Iranian resident physicians. *Journal of family medicine and primary care*, 7(2), 420. doi: 10.4103/jfmpe.jfmpe\_154\_17
- Kumar, V., Avasthi, A., & Grover, S. (2018). Somatosensory amplification, health anxiety, and alexithymia in generalized anxiety disorder. *Industrial psychiatry journal*, 27(1), 47. doi: 10.4103/ipj.ipj\_72\_17.
- Lashkari K.(2011). Measuring and preparing the emotional intelligence test and examining its validity and validity and softening on students of Tehran universities. Master Thesis. Islamic Azad University Tehran Branch..<https://doi.org/10.22038/ijp.2021.57875.4540>
- Lee, E. B., Barney, J. L., Twohig, M. P., Lensegrav-Benson, T., & Quakenbush, B. (2020). Obsessive compulsive disorder and thought action fusion: Relationships with eating disorder outcomes. *Eating behaviors*, 37, 101386. <https://doi.org/10.1016/j.eatbeh.2020.101386>.
- Lee, S. W., Song, H., Jang, T. Y., Cha, H., Kim, E., Chang, Y., & Lee, S. J. (2020). Aberrant functional connectivity of neural circuits associated with thought-action fusion in patients with obsessive-compulsive disorder. *Psychological Medicine*, 1-10.: <https://doi.org/10.1017/S0033291720003980>.
- Malehmir, B., Keyvanlo, S., Rafieerad, Z., Moazez, R., Sadri, M., & Zavarei, Z. (2021). Comparison of physical health and thought-action fusion in patients with obsessive-compulsive disorder, bipolar disorder and normal. *Shenakht journal of psychology & psychiatry*, 8(1), 147-159. doi:10.32598/shenakht.8.1.147.



- Mennin, D. S., Heimberg, R. G., Turk, C. L., & Fresco, D. M. (2005). Preliminary evidence for an emotion dysregulation model of generalized anxiety disorder. *Behaviour research and therapy*, 43(10), 1281-1310. <https://doi.org/10.1016/j.brat.2004.08.008>
- Muris, P., Meesters, C., Rassin, E., Merckelbach, H., & Campbell, J. (2001). Thought-action fusion and anxiety disorders symptoms in normal adolescents. *Behaviour Research and Therapy*, 39(7), 843-852. [https://doi.org/10.1016/S0005-7967\(00\)00077-2](https://doi.org/10.1016/S0005-7967(00)00077-2).
- Onur, E., Alkin, T., Sheridan, M. J., & Wise, T. N. (2013). Alexithymia and emotional intelligence in patients with panic disorder, generalized anxiety disorder and major depressive disorder. *Psychiatric Quarterly*, 84(3), 303-311. <doi:10.1007/s1126-012-9211-9>.
- Ozrudi, M. F., Faghanpour, S., & Goli, R. G. (2020). the Relationship Between Dimensions of Anxiety and Emotional Intelligence of Student Athlete's. *Asian Exercise and Sport Science Journal*, 4(2), 29-35. DOI: <https://doi.org/10.30472/aesj.v4i2.138>
- Parker, J. D., Taylor, G. J., & Bagby, R. M. (2003). The 20-Item Toronto Alexithymia Scale: III. Reliability and factorial validity in a community population. *Journal of psychosomatic research*, 55(3), 269-275. [https://doi.org/10.1016/S0022-3999\(02\)00578-0](https://doi.org/10.1016/S0022-3999(02)00578-0).
- Palmer, B. R., Gignac, G., Manocha, R., & Stough, C. (2005). A psychometric evaluation of the Mayer-Salovey-Caruso emotional intelligence test version 2.0. *Intelligence*, 33(3), 285-305. <https://doi.org/10.1016/j.intell.2004.11.003>
- Paniccia, M. F., Gaudio, S., Puddu, A., Di Trani, M., Dakanalis, A., Gentile, S., & Di Ciommo, V. (2018). Alexithymia in parents and adolescents with generalised anxiety disorder. *Clinical Psychologist*, 22(3), 336-343. <https://doi.org/10.1111/cp.12134>.
- Petrides, K. V., & Furnham, A. (2001). Trait emotional intelligence: Psychometric investigation with reference to established trait taxonomies. *European journal of personality*, 15(6), 425-448. <https://doi.org/10.1002/per.416>.
- Pollatos, O., Werner, N. S., Duschek, S., Schandry, R., Matthias, E., Traut-Mattausch, E., & Herbert, B. M. (2011). Differential effects of alexithymia subscales on autonomic reactivity and anxiety during social stress. *Journal of psychosomatic research*, 70(6), 525-533. <https://doi.org/10.1016/j.jpsychores.2010.12.003>
- Pourfaraj Omran, M., Bakhshpour, A., & Mahmoud Alilou, M. (2020). Comparison cognitive beliefs in obsessive-compulsive disorder, generalized anxiety disorder, major depression disorder. *Journal of Sabzevar University of Medical Sciences*, 27(2), 155-162. [https://jsums.medsab.ac.ir/article\\_1284.html?lang=en](https://jsums.medsab.ac.ir/article_1284.html?lang=en)
- Rashtbari, A., Dadashi, M., Vakili, M. M., & Malekizadeh, H. (2019). Evaluation of the Prevalence of Generalized Anxiety Disorder and Its Association with Worry in Students of Zanzan University of Medical Sciences. *Journal of Medical Education Development*, 12(36), 25-30. [doi: 20.1001.1.22519521.1398.12.36.6.4](https://doi.org/10.1001.1.22519521.1398.12.36.6.4)

- Sarno, I., Madeddu, F., & Gratz, K. L. (2010). Self-injury, psychiatric symptoms, and defense mechanisms: Findings in an Italian nonclinical sample. *European Psychiatry*, 25(3), 136-145. DOI: <https://doi.org/10.1016/j.eurpsy.2010.05.007>.
- Sewell, M. L. (2021). Frontal Alpha Wave Asymmetry in regard to Affect. <https://digitalcommons.cwu.edu/etd/1535>
- Shafran, R., & Rachman, S. (2004). Thought-action fusion: A review. *Journal of Behavior Therapy and Experimental Psychiatry*, 35(2), 87-107. <https://doi.org/10.1016/j.jbtep.2004.04.002>.
- Shafran, R., Thordarson, D. S., & Rachman, S. (1996). Thought-action fusion in obsessive compulsive disorder. *Journal of Anxiety disorders*, 10(5), 379-391. [https://doi.org/10.1016/0887-6185\(96\)00018-7](https://doi.org/10.1016/0887-6185(96)00018-7)
- Simon, N., Hollander, E., Rothbaum, B. O., & Stein, D. J. (Eds.). (2020). *The American Psychiatric Association Publishing Textbook of Anxiety, Trauma, and OCD-Related Disorders*. American Psychiatric Pub. <https://www.appi.org/Products/Anxiety-Disorders/American-Psychiatric-Association-Publishing-Textbo>
- Sinha, R., Mahour, P., Sharma, E., Mehta, U. M., & Agarwal, M. (2021). Obsessive belief and emotional appraisal correlates of symptom dimensions and impairment in obsessive-compulsive disorder. *Indian Journal of Psychiatry*, 63(4), 348. doi: 10.4103/indianjpsychiatry.indianjpsychiatry\_1194\_20.
- Suslow, T., Kugel, H., Rufer, M., Redlich, R., Dohm, K., Grotegerd, D., ... & Dannlowski, U. (2016). Alexithymia is associated with attenuated automatic brain response to facial emotion in clinical depression. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, 65, 194-200. <https://doi.org/10.1016/j.pnpbp.2015.10.006>.
- Taylor, G. J., Bagby, R. M., & Parker, J. D. (1999). Disorders of affect regulation: Alexithymia in medical and psychiatric illness. Cambridge University Press. [https://doi.org/10.1002/1099-0879\(200007\)7:3<240::AID-CPP245>3.0.CO;2-7](https://doi.org/10.1002/1099-0879(200007)7:3<240::AID-CPP245>3.0.CO;2-7)
- Tempesta, D., Mazza, M., Serroni, N., Moschetta, F. S., Di Giannantonio, M., Ferrara, M., & De Berardis, D. (2013). Neuropsychological functioning in young subjects with generalized anxiety disorder with and without pharmacotherapy. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, 45, 236-241. <https://doi.org/10.1016/j.pnpbp.2013.06.006>
- Thompson-Hollands, J., Farchione, T. J., & Barlow, D. H. (2013). Thought-action fusion across anxiety disorder diagnoses: Specificity and treatment effects. *The Journal of nervous and mental disease*, 201(5), 407. doi: 10.1097/NMD.0b013e31828e102c
- Wittchen, H. U. (2002). Generalized anxiety disorder: prevalence, burden, and cost to society. *Depression and anxiety*, 16(4), 162-171. <https://doi.org/10.1002/da.10065>