Comparing the effectiveness of transactional analysis (TA) and imaginary exposure and response prevention (ERP) training courses on reducing students' academic anxiety

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ARTICLE INFORMATION

ABSTRACT

Background and Aim: One of the factors that exist as a challenge in school and that students face is anxiety. The present study was conducted with the aim of comparing the effectiveness of two methods of teaching interaction analysis (TA), imaginary exposure and response prevention (ERP) on reducing students' academic anxiety. **Methods:** The research method was quasi-experimental in the form of a pre-test-post-test design and a two-month follow-up with three experimental groups and one control group. The research community was made up of high school students in Tehran. The research sample was 45 students who were diagnosed with academic anxiety after answering the Phillips (1978) academic anxiety questionnaire. Students were randomly replaced in two experimental groups and a control group of 15 people. Each of the experimental groups was exposed to one of the methods of imaginary exposure and response prevention (in five 90-minute sessions) and mutual behavior analysis (in ten 90-minute sessions). **Results:** The results of data analysis using multivariate covariance analysis showed that according to the adjusted averages of the academic anxiety variable in the three studied groups and the results of the LSD follow-up test, both methods of imaginary exposure and prevention from the response and interaction analysis, it has been effective in reducing students' academic anxiety (F=6.33, P<0.001). **Conclusion:** It can be concluded that the method of imaginary exposure and response prevention has a greater effect in reducing academic anxiety compared to the interaction analysis method.

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Introduction

The mental health of the educational environment is one of the most important aspects of human resources development and improvement, and in the last few decades, it has attracted the attention of educational organizations regarding the cultivation of physically and intellectually healthy forces in educational institutions. (Yang et al., 2019). Educational theorists and researchers want research and experimental evidence about factors affecting academic performance in different cultures and educational systems to present their theories about academic progress (Rastegar, 2013). One of the factors that exist as a challenge in school and that students face is anxiety. Anxiety has long been considered as a natural response to stress issues, so that its investigation and treatment have not been given much attention. The research conducted in this field indicates that tension is a major factor in the occurrence of problems for students. In other words, the tension in the age of technology and the increase of all-round changes and inattention to the values governing the family, lead today's people to anxiety (Romano et al., 2020). One of the types of anxiety is academic anxiety, and it is an unpleasant emotional state that is accompanied by distress and anxiety and is formed under situational factors and characteristics, and its main source is fear of failure and lack of self-confidence. (Dubus et al., 2021). Academic anxiety consists of 4 components, which are academic anxiety, fear of self-expression, physiological reactions and lack of self-confidence. Academic anxiety is the anxiety that occurs during students' studies and is the most important type of anxiety in adolescence. Academic anxiety threatens the mental health of students and has a negative impact on the efficiency and flourishing of talents, the formation of their personality and social identity (Raymonda et al., 2020).

The second variable that is provided in the research to the participants of the second group is transactional analysis (TA) training. The theory of transactional analysis, which was further developed and expanded by Eric Burn, is a theory that can be used to take effective steps in personal recognition and treatment and psychological development. This theory is effective in improving human relations and, as a result, a person's better compatibility with others and the way he knows himself (Shekoi et al., 2020). Transactional analysis means that a person at any time, which one of my states has power and can better understand his and others' behavior in the social context (Rajabi & Nikpour, 2018).

Transactional analysis is an interactive treatment method that emphasizes the cognitive, rational and behavioral aspects of the treatment process, and its purpose is to increase people's awareness and power to make new decisions in order to change their life flow (Shafi Abadi, 2015). Transactional analysis is one of the most effective psychological theories that helps to solve the problems in human relationships and helps the growing process of happiness in people. Changing the way of looking at life, taking into account the existential dimensions of oneself and others, will lead to the achievement of a higher quality life, and will lead to the discovery of a new way of life full of happiness and joy (Boholst, 2009). In this research, another group of participants will be exposed to transactional analysis training for ten sessions. Therefore, by identifying the three structures of their personality, they can understand how they affect their behavior at different times and can behave in appropriate situations with appropriate emotional states and overcome their academic anxiety.

Another training method that the third group of participants are exposed to is the imaginary exposure and response prevention method. The method of exposure and response prevention was first reported by Meyer in 1966 as a successful treatment for obsessive compulsive disorder. This treatment method consists of two separate parts. The first part of this therapy method is exposure, which can be imagined, i.e. putting the patient in an imaginary situation (mental imagery) that causes anxiety related to their anxiety. (Tohing et al., 2018). The purpose of this method is for the patient to face his fears so that his anxiety responses are reduced. This exposure, which is organized hierarchically, can be at the level of reality or fantasy. The second part of this treatment method (ERP) is response prevention. In using this method, habits or obsessive behaviors that may be used by the patient to reduce their anxiety or to avoid anxiety-provoking situations are identified. Then the patient is encouraged to refrain from any kind of obsessive rituals and avoidances. Several experimental evidences have been able

to prove the effectiveness of therapeutic behavior in the field of anxiety disorders. In this research, the participants are exposed to an anxiety-inducing stimulus and after the appearance of physiological symptoms corresponding to anxiety, they prevent the response until they finally encounter the highest intensity of anxiety and do not produce a response (Boholst, 2009).

Until now, effective and useful treatment methods such as behavioral and cognitive treatments have been recognized as the treatment of choice for academic anxiety. Therefore, the present study aims to identify the most effective method in reducing academic anxiety symptoms in second year high school students by comparing two new methods of education and therapy such as (TA) and (ERP), in order to improve the academic progress of students.

Method

The research method was quasi-experimental in the form of a pre-test-post-test design and a two-month follow-up with three experimental groups and one control group. The research community was made up of high school students in Tehran. The research sample was 60 students who were diagnosed with academic anxiety after answering the Phillips academic anxiety questionnaire. Students were randomly replaced in three experimental groups and a control group of 15 people. Each of the experimental groups was exposed to one of the ERP, TA methods. Also, in order to comply with the ethical principles, after the completion of the training sessions and the implementation of the post-test on the test and control groups, appropriate treatment sessions were also performed on the control group.

Materials

1. Academic anxiety questionnaire (school). The Phillips (1978) academic anxiety questionnaire (1978) has 74 items and measures 4 areas: fear of self-expression, test anxiety, lack of self-confidence and physiological reactions. Abul Maali et al. (1993) in a research titled "Reliability, validation and standardization of academic anxiety scale (school)" have reduced the number of questions by 52 items. Therefore, the questionnaire used in this research had 52 items to which the participant answered yes, no and sometimes, his total score was obtained from the sum of the scores of each question. In this way, he received 3 points for each yes answer, sometimes 2 points and 1 point for no. The reliability of this test is 0.92, and the standard error of its measurement is 18.3. Reliability calculation was obtained through the internal consistency of the questions with Coder-Richardson's formula 20. The validity of this test has been calculated by factorial validity methods: simultaneous criterion validity and face validity. Its factor validity has been obtained by the method of factor analysis, which has shown the mentioned 4 areas. Concurrent criterion validity of this test is done by comparing two groups of anxious and normal students. The average scores of these two groups in this test were significant with an error of 0.01, so this test can distinguish between the two groups (Abolmaali et al., 1993). The face validity of this test has been confirmed by experts. The reliability of this test in the research of Abul Maali et al. (1993) which was performed on 30 people is as follows. Fear of self-expression was calculated as 0.82, lack of self-confidence as 0.79, exam anxiety as 0.85, and physiological reactions as 0.72. In this research, the retest method was used to calculate the reliability. In this way, the preliminary test was first conducted on 60 students, and after 3 weeks, the second test was conducted again on the same group. Using Pearson's correlation in the retest method, the total reliability rate was 0.80. Using Cronbach's alpha, the reliability of each of the sub-tests was determined, which was 0.80 for fear of self-expression, 0.87 for exam anxiety, 0.70 for lack of self-confidence, and 0.78 for physiological reactions.

2. Transactional analysis method: The participants were exposed to the experimental variable of transactional analysis training for ten sessions.

Table 1. TA sessions content	
Session	**The content of the meetings**
1	Familiarity with anxiety
2	Getting to know the emotional states of parent-adult-child
3	Description and detection of pollution
4	rubber band

5	Hidden messages and non-verbal behaviors
6	Caresses and caressing filters and discovering the desired caresses of each participant
7	Draft life and inhibitors
8	Destructive feelings and genuine feelings
9	Mental games
10	Clarifying mental games and challenges with them

3. Imaginal exposure and response prevention: The participants were exposed to the experimental variable of the imaginary exposure and response prevention method for five sessions.

Table 2. Imaginal exposure and response inhibition training sessions	
Sessions	The content of the meetings
1	Familiarity with anxiety and its accompanying physiological manifestations
2	Relaxation training with mental imagery
3	Encouraging the participants to mentally visualize an anxiety-provoking situation at a moderate level and act calmly after the appearance of anxiety symptoms.
4 - 5	Narrating anxiety-provoking situations in a step-by-step and regular manner and preventing the response to reduce sensitivity

Implementation

Ethical considerations in this research were such that participation in this research was completely voluntary. Before starting the project, the participants were familiarized with the specifications of the project and its regulations. People's attitudes and opinions were respected. The members of the experimental and control groups were allowed to withdraw from the research at any stage. In addition, if interested, the members of the control group could receive the intervention performed for the experimental group in similar treatment sessions after the completion of the plan. All documents, questionnaires and confidential records were only available to the executives. Written informed consent was obtained from all volunteers. In the descriptive analysis of the data, the statistical indices related to each of the research variables were calculated. In the inferential statistics section, analysis of variance test with repeated measurements and SPSS-22 software were used.

Results

In terms of demographic variables, it can be acknowledged that the statistical sample, as well as the statistical population of the present study, were homogeneous. In the following, the descriptive findings of the research are reported.

Table 3. Mean and standard deviation of anxiety variable and its components in the four studied groups									
Variable		Pre-test			Post-test			Follow-up		
Anxiety	Index	ERP	TA	Control	ERP	TA	Control	ERP	TA	Control
	Mean	39/20	40/66	30/61	29/06	34/33	30/33	29/46	33/53	30/33
	SD	1/26	2/16	4/83	5/89	6/11	4/80	5/51	6/18	4/80

The assumption of normality in academic anxiety in four groups in all three stages of measurement was confirmed with a significance level greater than 0.05. The result of Levin's test is given to check the assumption of homogeneity of error variances. Based on the listed results, the assumption of homogeneity of variances in the academic anxiety variable is confirmed with a significance level greater than 0.05. A variance test to check the regression

slope in academic anxiety was confirmed with a

significance level greater than 0.05.

Table 4. Results of variance analysis with repeated measures to compare the four studied groups in the variable of academic anxiety						
The source of the work	SS	Df	ME	F	Sig.	Eta^2
Time	68/59	2	34/29	248/48	<0/001	0/85
Time*Group	29/90	4	7/47	54/15	<0/001	0/72
Group	41/23	2	20/61	57/74	<0/001	0/54

After adjusting the pre-test scores, the difference between the three experimental and control groups in the variable of academic anxiety is significant. In the following, using the LSD post hoc test, each of the four groups has been investigated separately.

Table 5. LSD post hoc test results for multiple comparisons between four groups					
Independent variable	Group	Control	Mean diff.	Std Err	Sig.
Academic anxi	ERP	TA	91/3-	84/1	039/0
		Control	92/8-	71/2	002/0
	TA	Control	00/5-	98/2	099/0

As the results of the follow-up test (Table 5) show: In the variable of academic anxiety, there was a significant difference between the group that was treated with imaginary exposure and response prevention and the group that was treated with transactional analysis with a significant level of 0.039 and at a level of 0.05 (P<0.05). There was no significant difference between the transactional analysis treatment group and the control group, with a significance level of 0.099 (P>0.05).

Conclusion

According to the findings, it can be seen that the treatment of imaginary exposure and response prevention was effective in reducing students' academic anxiety, and considering that the mean difference between the transactional analysis group and the control group was not significant. It can be said that transactional analysis treatment has not been effective in reducing students' academic anxiety. Therefore, the hypothesis that there is a difference between transactional analysis and short-term teaching methods and imaginary exposure and response prevention in reducing the academic anxiety of second year high school students is confirmed. The results of this research are consistent with the results of Aslani (2017), Alilou (2012). In explaining this finding, it can be said that the theory of transactional analysis pays a lot of attention to the issues of humanism and

considers humans as having a good nature. This theory is one of the practical theories in counseling (Adib et al., 2015). One of the important and underlying principles in transactional analysis teamwork is awareness, which is one of the most important processes used for fundamental changes in thoughts, feelings, and behavior. At the beginning of treatment, having people aware of their performance problems and paying attention to them will bring about fundamental changes in their lives (Yan et al., 2011). This training is effective for dealing with stress in teenagers and adults and it prevents the symptoms caused by anxiety in teenagers and has a positive effect on their mental health. All humans experience anxiety in their lives and become anxious when faced with threatening and stressful situations, but feeling severe and chronic anxiety in the absence of a clear cause is unusual.

In explaining the low effect of the transactional analysis method, it can be pointed out that in every family, rules are set for children openly or implicitly. According to these rules, a limited range of emotions is allowed for the child, and some must be suppressed, and this leads to anxiety, which is called stamp collecting in transactional analysis. The simultaneity of these rules and not having a briefing session for parents to adjust their behavior and rules probably caused the result of education to not be

effective enough on students' anxiety (Yan et al., 2011).

Exposure therapy is the most effective anxiety treatment for people with anxiety disorders. Exposure therapy involves practicing and working on fears to reduce fear. Exposure therapy helps you retrain your brain. This therapy isn't just about getting used to the fear, it's about retraining your brain to stop sending the fear signal when faced with something that isn't considered a real threat. Therapists who use exposure consider psychological injuries based on anxiety according to traditional behavioral theory and emotional processing theory. Visual and real exposure therapies are derived from conditioning theories. The therapeutic strategy is to reverse neurotic reinforcement or paradoxical dependencies: deliberate and prolonged exposure to feared stimuli (prolonged exposure) and active inhibition of associated avoidance (response prevention). Patients will definitely experience more anxiety in the short term, but through the process of shutting down, they will certainly experience a reduction in anxiety and avoidance in the long term. In this research, with the implementation of exposure therapy techniques, there were significant changes in the level of their academic anxiety (Keogh, 2006).

By using the exposure therapy method, in contrast to the gradual approach of regular desensitization, he is faced with an anxiety-inducing stimulus and tolerates that stimulus until his anxiety decreases or disappears. In this study, the students were faced with situations of academic anxiety by presenting sessions in Mani therapy, so that the amount of all four components in these students decreased. Academic anxiety is a type of self-absorption that is characterized by self-deprecation and doubt about individual abilities, and often leads to negative cognitive evaluation, lack of concentration, adverse physiological reactions such as increased heart rate, cold fingers, and low blood pressure. It leads to academic decline (Keogh, 2006). A form of exposure therapy is emotional visualization, which is also mentioned in the training sessions. In this technique, students produce special mental images in which a person creates courage and pride and other responses that inhibit anxiety and it decreases through the amount of stress.

The goal in transactional analysis is to achieve autonomy through awareness, mental health and spontaneity. Conversational communication analysis helps people to use their adult self to establish and create complementary and soothing communication. Establishing correct communication prevents many tensions and conflicts and people can use their abilities as much as possible for their growth and prosperity (Tangulu & Maasi, 2018). Getting to know this method helps Joe to fight the beliefs he has about himself and to be free in his choices to decide who he wants to be. This method can quickly increase a person's ability to tolerate and control their anxiety. People with a weak perception of self-efficacy experience a lot of anxiety when facing potential risks. People who believe that they cannot deal with anxiety-provoking events experience a lot of distress and instead of focusing on what they can do to adapt to that situation, they focus on their failure and inability to adapt to that situation. (Woos & Van Rijn, 2021). Therefore, what should be improved is not self-esteem and self-efficacy, but the improvement of the skills to deal with the factors of failure, which is important as a shield or a force to deal with and face the challenges and problems of developing coping skills in the life of teenagers. It includes a wide range of internal and external behaviors, actions and reactions of a person in dealing with a stressful factor or any kind of cognitive and behavioral efforts that have been made in order to gain the efficiency of reducing or tolerating internal or external problems caused by pressure.

This research, like other researches, has some limitations that should be considered in future researches. Like most other researches, self-report instruments were used to measure the desired constructs, and for this reason, accurate data about the measured variables may not have been obtained. One of the limitations of this research is the lack of supervision of practice assignments outside of training sessions. Researchers are suggested to repeat this research in other regions and with different cultures, because this work not only increases the power of generalization of the findings, but also by using the obtained results, the findings can be compared. According to the findings of the present study, it is suggested to education officials and private counseling centers to use transactional analysis and short-term treatment methods and imaginary exposure and response prevention to treat anxious students.

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