



## The effect of cognitive therapy based on the allegorical on anxiety and depression in students

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### Abstract

Anxiety and depression are the most common mental health problems among children and adolescents and can affect their performance among many other aspects of their lives. The purpose of controlled semi-experimental study uses a pretest-posttest design to do the effect of allegorical cognitive therapy on anxiety and depression disorders among students. The study population consisted of all junior high school students from district 3, who completed Spielberger's State-Trait Anxiety Inventory and Maria Kovacs' Children's Depression Inventory. A total of 24 students with the highest scores of anxiety and the lowest scores of depression were selected and randomly divided into a trial group and a control group after matching. The trial group received allegorical cognitive therapy over 12 one-hour sessions, but the control group received no training. Both groups then took the posttest at the end of the intervention. The results showed a significant difference between the trial group and the control group in their anxiety and depression after the educational intervention, which persisted until the 6-month follow up evaluation. cognitive therapy based on the allegorical successfully reduced anxiety and depression in the students after their educational intervention had ended and persisted until the follow-up period.

**Keywords:** Anxiety, Cognitive Therapy, Depression

### Introduction

Introduction Over the past two decades, anxiety has become the focus of research as a predictor of general and psychological health and was shown to have a significant relationship with academic performance in particular [1]. As a reaction to external stressors, anxiety reduces the individual's reaction in social, psychological, physical and academic domains and leads to academic and professional failures, reduced productivity, increased errors, decline in judgments and slow reaction time [2].

Depression is a disease characterized by personal frustration and failure in achieving one's goals. Cognitivists believe that depression is caused by negative thoughts and irrational attitudes [3]. The huge wealth of information derived from different studies indicates that most personality disorders of adolescence are caused by psychological problems, which are mainly manifested in the form of anxiety, depression and aggression [4]. According to the results of different

studies, it is commonly believed that people with anxiety and depression are unable to effectively communicate with and adapt to other individuals and are predisposed to a variety of physical diseases; this disorder can disrupt the process of emotional management in them [5].

In clinical literature, the concept of cognitive therapy is said to have first been introduced in studies by Ellis and Beck. The majority of cognitive therapy based theories have been derived from Ellis and Beck therapies. Yet, in some areas, there are differences between the two [6]. According to the cognitive approach, people's emotional and psychological problems are caused by cognitive schema, intellectual errors, cognitive distortions and futile beliefs, and the common belief is that many problems faced by neurotic people are not rooted in their unconscious, their suppressed past events, their genetic predisposition or their endocrinological problems, but rather in their attitude toward the events that form their moods and emotions [7]. Metaphors can be used more accurately in cognitive therapy within the theoretical framework of therapeutic approaches and the formulation of patients' chief complaints. When watching the bigger general picture, different filters can be occasionally used to change the color, clarify the image and see the details more clearly; schemas are well suited to this role [8].

Literally, "allegorical" signifies examples and similes; it denotes a kind of illustration that intentionally ascribes already-known moral concepts and intentions to people, objects and events. That is, the writer chooses his characters, events and setting such that they often go beyond the surface narrative of his story and convey a secondary meaning to the readers [9]. Using stories, metaphors, mental illustrations and examples is conducive to a more creative and effective application of cognitive therapy. According to Adler, cognition is receiving something through something else. In the process of understanding, we are always dealing with allegories, and all concepts and cognitions are founded on receiving these allegories [10].

Allegory helps us see and understand the world around us in a different new light [11]. An important aspect of allegory that makes it such a powerful psychotherapy tool is that it helps therapists represent seemingly complex issues through simple, objective recreation. Allegory allows us to externalize abstract ideas and translate them into tangible concepts. Perhaps this is why Shlain believes that allegory is a unique support from the right hemisphere of the brain to the language capabilities of the left hemisphere. Allegory allows both hemispheres, in particular the cortex, to be stimulated [10].

Cognitive therapy is a standard, structured and fully planned method that defines the principles and techniques of working with patients in a step-by-step manner. Variables involved in the problem include: 1) initiators or originators, 2) facilitating variables, 3) maintaining variables, and 4) moderating variables. The main purpose from this approach is to eliminate or moderate the maintaining variables, which are always a false notion or belief referred to as an intellectual error or irrational belief. The six basic steps for teaching allegorical cognitive therapy include:

Step 1: Identifying the situation and the cause of suffering and distress

Step 2: Identifying the emotions and their intensity

Step 3: Identifying the thoughts, including automatic thoughts preeminent to emotions

Step 4: Challenging the thoughts and beliefs through the evidence available against the thoughts

Step 5: Reacting to futile thoughts and replacing them with rational and fruitful thoughts

Step 6: Re-assessing the beliefs, thoughts and emotions [12].

To allow the patient to understand the error in his thoughts, allegorical group counseling is used in the fourth and fifth steps, which minimizes the task of challenging the patient's thoughts.

In their study on patients with hypochondria

and severe health anxiety, Lovas and Barsky [13] found cognitive therapy to be effective in the improvement of thoughts associated with disease, anxiety and physical symptoms.

Goldin and Cross [14] studied the efficacy of stress reduction cognitive therapy in improving emotional control in 14 patients with social anxiety disorder and recorded the subjects' brain activity before and after the therapeutic intervention through a functional MRI. The results obtained showed this therapy to reduce the experience of negative emotions and amygdala activity and to increase brain activity in regions that are activated with an increased attention span. In an un-controlled pretest-posttest study conducted on 34 high school aged adolescents with learning disorders, Beauchemin, Hutchins and Patterson [15] found that cognitive therapy reduces anxiety in these students and improves their social skills and academic performance.

Tian Vieve and Dingle [16] investigated the efficacy of Group Cognitive Behavioral Therapy (GCBT) as an intervention for unipolar depression in a sample of adolescent boys aged 12-16. Their results clearly confirmed the effect of GCBT on depression.

Kearney, Gibson, and Christensen [17] investigated the effect of cognitive-behavioral therapy on depression, attribution style, self-esteem and vulnerability to depression in 78 adolescent school boys at the age range of 13 to 14. Symptoms of depression were assessed in the subjects before the intervention and 16 weeks after. The results obtained showed a post-intervention reduction by 34% in symptoms of depression, by 17% in attribution style and by 16% in self-esteem; however, no changes were observed in the control group. Despite the small effects obtained, a 9% reduction in depression was observed in the intervention group.

Gumley, Karatzias, Powers and Reilly [18] studied the effect of cognitive-behavioral therapy on negative beliefs about self-esteem and depression and found that, with the observation of the first symptoms of the disease, this therapy can be used to reduce negative beliefs about depression and improve self-

esteem. In their experimental study entitled "a comparison of the effects of group cognitive therapy and teaching study skills in reducing test anxiety and trait anxiety", Atai-Nakhaee, Ghanbari-Hashemabadi, Modarress-Gharavi [19] performed a group intervention of five sessions on students who had voluntarily visited the clinic to treat their test anxiety. The control group received training on study skills while the training provided to the experimental group covered mindfulness and cognitive therapy meditation. The study results showed that cognitive training was significantly more effective than the mere teaching of study skills.

In a study entitled "the application and efficacy of metaphors and allegories in cognitive behavioral therapy of patients with depression", Naziri [20] performed two methods of cognitive therapy individually, including a cognitive behavioral therapy and a metaphorical-allegorical therapy, on 8 depressed patients. The results revealed both methods to have significantly reduced the patients' scores in the different variables examined; however, the greater percentage of change noticed with the use of the metaphorical-allegorical approach was indicative of its superiority over the propositional approach. There were no significant differences between the two groups in terms of their satisfaction with the therapy; however, in the follow-up stage, the rate of recollecting the therapy content was significantly higher in patients who had received metaphorical therapy compared to the other group.

Karami [21] conducted a study on the efficacy of cognitive-behavioral group counseling in reducing depression in 20 elementary school girls with divorced parents living in two boarding schools in Tehran affiliated with the Welfare Organization of Iran. The girls were selected through convenience sampling and were then randomly divided into a control group and a experimental group. The results obtained after holding 8 teaching-therapy sessions for the experimental group confirmed the effect of cognitive-behavioral group

counseling in reducing depression in children of divorce.

The ultimate goal of education is to teach students academic skills and foster in them self-esteem, the capacity for thinking, reasoning, having a proper understanding of concepts and recognizing others' social roles and positions and instilling in them religious doctrines and moral virtues, self-awareness and the spirit of cooperation and to finally prepare them for entering the social arena (the Education Bill of the Islamic Republic of Iran). To achieve these goals, students should be physically, mentally, emotionally, socially and behaviorally healthy and well-developed so that they can acquire these fundamental skills [22]. The huge wealth of information gained through different studies indicates that, the majority of personality disorders in adolescence are caused by psychological problems, which are mainly manifested in the form of anxiety, depression and aggression [23]. With an emphasis on increasing adolescent students' mental health in order to be able to focus on learning and realizing the goals of the education system and becoming a good citizen, allegorical cognitive therapy was adopted as the basis of the researchers' new perspective on group counseling for adolescent students and for assessing anxiety and depression in them, especially since it connects better to the mind and since correcting thoughts also improves behaviors. This study seeks to encourage the development of a localized counseling style for adolescents. Then, this study was conducted to assess the effect of allegorical cognitive therapy on depression and anxiety levels in adolescent students.

### **Method**

This controlled semi-experimental study has a pretest-posttest design and includes a follow-up stage. The study population consisted of all the female students in their third year of junior high school in district 3 of Karaj, Iran in 2011-2012. One school (i.e. municipal district) was randomly selected from a list of

junior high schools in district 3 of Karaj as the study sample. All the third year students in this school then took the pretest, and 24 students who had simultaneously received the highest scores in anxiety and the lowest in depression (with the lower scores indicating greater depression) were selected. To match the groups, all the 12 students in the control group were matched with the experimental group in pairs according to their average scores.

The experimental group participated in an allegorical cognitive therapy training course held over 12 one-hour weekly individual and group sessions. Participants were required to take part in at least 11 sessions to remain in the experimental group. The content of the training sessions was derived from relevant sources supported by research (Table 1).

The control group received no interventions. One week after the training sessions held for the experimental group ended, both groups were assessed using Spielberger's anxiety and Maria Kovacs' depression inventories, and the follow-up evaluation was carried out 6 months later. To conform to the ethical considerations of research, the control group also took part in allegorical cognitive therapy training sessions after the follow-up. Data were analyzed using the pretest, posttest and follow-up scores obtained for the study variables by the experimental group and the control group. Descriptive statistics such as mean and standard deviation were used to present the descriptive data, and the repeated measures covariance analysis was used to compare the experimental and the control groups' mean scores before and after the intervention and to assess the significance of the difference between their pretest and posttest scores.

State-Trait Anxiety Inventory (STAI-Y): This state-trait anxiety inventory was first introduced by Spielberger et al. and was revised. The revised version contains 40 items, with items 1 to 20 being concerned with state anxiety and providing 4 options (not at all, occasionally, often and very much), and items 21 to 40 concerned with trait anxiety and providing 4

options (almost never, sometimes, most of the time and nearly always) [24]. The reliability and validity of the test were calculated as 0.94 and 0.83 by Spielberger et al. Mahram [25] normalized the test in Mashhad for use in Iran and reported its reliability and validity as 0.91 and 0.77. The reliability and validity of the test were determined as 0.87 and 0.72 in the present study.

Children's Depression Inventory (CDI): The Children's Depression Inventory is a self-report

depression tool for ages 7 to 17 designed. The CDI is a 27-item test derived from the Beck Depression Inventory. Each one of the 27 items contains 3 statements, and participants have to refer to their emotions and thoughts over the past two weeks and choose one [24] and used in their MSc and PhD theses. The reliability and validity of the questionnaire were 0.71 and 0.85 in the original version, 0.71 and 0.89 in the Iranian version and 0.7 and 0.88 in the present study.

**Table 1** Content of the allegorical cognitive therapy training sessions combined with the table of allegories related to futile beliefs [Ellis & Harper; Edelman 10]

Session		Topic Curriculum
1	Initial assessment and clinical interview	Cooperation and assurance, verbal and non-verbal communication, introducing the therapy method and the effect of psychological factors on physical state
2, 3	Identifying anxiety and depression; active adaptive coping	Recording adverse daily events, emotions and thoughts, identifying symptoms of the disorder, coping strategies for the disorder, guided relaxation and imagination
4, 5	Dealing with negative emotions and cognitive reconstruction	Discovering negative self-talk, identifying cognitive errors, training to replace negative self-talk with a positive one (the effective use of allegories for the replacement of negative beliefs with positive ones)
6-9	Anxiety and depression management	Defining anxiety and depression, proper and effective relationship styles, identifying conditions, people and situations that cause anxiety and depression, teaching disorder control techniques
10	Problem-solving	The concept of problem-solving, problem-based coping styles and emotion management techniques, adaptive and non-adaptive emotion-based coping styles
11	Examining activities affecting mood and creating effective social relations	Review of sessions, assessment of the activities performed so far by the students, teachers and parents, therapy advices
12	Preparing for completing and continuing the therapy and generalizing what was learnt during the program	Assessment of the students' progress, evaluation of the students' mood and anxiety, emphasis on an ongoing use of the training program for adaptive coping, arranging group activities and support from the environment

## Results

Table 2 presents descriptive indicators, including the mean and standard deviation of the pretest, posttest and follow-up scores in the experimental and control groups for the

depression and anxiety scales. Proper assumption were made using the repeated measure analysis of covariance before analysing the study results. Mauchly's

**Table 2** Descriptive measures of the test scores of depression and anxiety in the two groups

Index	Control group			Experimental group			
	Post test	Pre test	Follow	Post test	Pre test	Follow	
Depression	M	18.42	7.8	7.33	19.01	18.98	18.99
	S-D	3.46	1.91	1.95	3.96	3.85	3.91
Anxiety	M	106.83	74.21	74.28	105.93	105.18	105.48
	S-D	8.41	5.91	5.61	5.83	4.63	3.91

sphericity test did not show significant results at the 0.05 level for any of the study variables. The equal variance assumption and, more precisely, the homogeneity of the covariance matrix were therefore ensured and the repeated measure model was then used. According to Levene's test, the variance

between the experimental group and the control group was not significant at the 0.05 level either, and the analysis of covariance could therefore be used without a problem. The results of assessing the intra-group variations using the repeated measure analysis are presented in Table 3.

**Table 3** Test results of repeated measurements of depression and anxiety than two to both parts of the test in each group.

Index	Control group				Experimental group			
	Pre test- Post test		Pre test-Follow		Pre test- Post test		Pre test-Follow	
	F	p-value	F	p-value	F	p-value	F	p-value
Depression	8.56	0.001	0.082	0.77	0.87	0.31	0.009	0/91
Anxiety	9.16	0.001	0.078	0.78	0.51	0.37	0.007	0.97

As shown in Table 4, to the results of the analysis of covariance for assessing the inter-group variances show a significant difference in the mean posttest scores of depression and anxiety between the experimental group and the control group –taking into account the initial differences in the pretest. There was also a significant difference between the mean pretest

and posttest scores of depression and anxiety in the experimental group; however, this difference was not significant in the control group. The effects of the intervention persisted until the 6-month follow-up period and there were no significant differences between the mean posttest and follow-up scores in the experimental group.

**Table 4** Covariance analysis scales, scores of depression and anxiety in children

	Resource change	DF	Mean square	F	p-value
Depression	Post test	1	141.99	31.82	0.001
	Group	1	109.19	22.53	0.001
Anxiety	Pre test	1	106.20	18.15	0.001
	Group	1	25.17	21.42	0.001

**Discussion**

The results obtained showed that this therapy was significantly effective in reducing the students' depression and anxiety post-intervention and after the 6-month follow-up period in the experimental group compared with the controls. These results are consistent with the results obtained by Lovas & Barsky [13],

Goldin & Cross [14], Beauchemin, Hutchins & Patterson [15], Tian Vieve & Dingle [16], Kearney et al. [17], Gumley et al. [18], Atai-Nakhaee, Ghanbari-Hashemabadi, Modarress-Gharavi [19], Naziri [20] and Karami [21] in studies on the effect of allegorical cognitive therapy in reducing anxiety and depression in

children and adolescents.

Psychologists believe that students should be physically, mentally, emotionally, socially, and behaviorally healthy and well-developed to be able to acquire the fundamental skills taught to them. Various studies have shown that psychological problems, in particular depression and anxiety, can negatively affect people's normal life. It is commonly believed that people with depression and anxiety cannot effectively communicate with others and adapt themselves to them and are thus predisposed to a variety of physical diseases. This disorder can lead to problems in their regulation and management of their emotions [26] and may then hinder the students' achievement of the goals of education, including the acquiring of academic skills, self-esteem, capacity for thinking and reasoning, proper understanding of concepts, recognition of the social roles and positions of others, religious doctrines and moral virtues, self-awareness and the spirit of cooperation for the ultimate goal of preparing them for entering the social arena (the Education Bill of the Islamic Republic of Iran). According to the results obtained, teaching cognitive methods can largely put a stop to irrational stress and anxiety in people, which might be due to the acquiring of skills such as making primary rational evaluations, recognizing cognitive distortions and controlling attributes that create anxiety. According to the rational-emotive model of Ellis, there is a close relationship between what a person tells himself and his manner of projecting his emotions. In other words, the majority of people's emotional problems and the behaviors associated with those emotions are rooted in their irrational expressions in the face of situations or events that they find contrary to their liking [27]. Those who act irrationally in dealing with the events they find contrary to their liking and consider any undesirable event a disaster tend to believe that events are unbearably terrible [26]. Some of the techniques used in studies on cognitive therapy include problem-solving, positive self-talk, positive encounter, not ignoring problems and being domineering, which are also consistent with the cognitive behavior change

method proposed by in which the individual tells himself what behaviors he may perform in different situations. He believes that talking to oneself and being domineering over problems create favorable changes in behavior and the management of emotions caused by stress. Adolescents' awareness of the relationship between cognitive, emotional and behavioral elements in different events and their examination in the form of exercises and experiences can result in a better management of such emotions as anxiety and depression [10].

Moreover, forming peer groups has an extraordinary effect in the treatment of many disorders, since the formation of groups leads to the creation of a miniature social realm that is composed of the experiences of every single group member. Each group member is predicted to behave in such a way as to reflect his real interpersonal life style. The behaviors of each member will reveal his belief about himself, his attitude toward others, his social values and his belief about the means of reaching a sense of belonging and socially solving problems, which all facilitate the recognition of distorted perceptions, false beliefs and improper approaches to problems.

### **Conclusion**

Cognitive therapy is the most common and effective psychotherapy technique recognized in the modern day. It emphasizes that, to treat people with anxiety and depression, their false assumptions should be questioned and examined, so that they can change their negative perspectives. In cognitive therapy, the use of allegories and classical anecdotes facilitates the patient's understanding of his own false ideas. As members of a group, people tend to discover their own negative false beliefs about the problems that they have encountered in their life and realize that their problems are not unique. They then become more inspired to change. This tendency was also noticed in participants of the present study after the intervention. Among the cognitive changes that took place in the members of the

training groups was a greater attention to their own thoughts and emotions and also a greater tendency to criticize other people's thoughts and propose positive alternatives, which, according to the students' mothers and teachers, continued outside the classroom as well.

The limitations of the study were included:

The present study used only one method of intervention and comparing it to other counseling strategies was therefore not a possibility. The repeated measure method was limited to a specific interval of time.

This study was conducted on female students, and due to the gender differences and the factors creating and causing the persistence of anxiety and depression and subsequently leading to academic failure, a similar study is recommended to be conducted on male students, so that a comparison can be made between the genders and a greater generalizability of the results can be achieved.

Families were not a subject of scrutiny in the present study, and since most behaviors and thoughts are significantly affected by what has been passed on from parents and other people, future studies are recommended to also take account of this important factor. Since the present study was conducted on junior high school students, it is recommended for future studies to be conducted on students in other levels of education.

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### Contribution

Study design: FA

Data collection and analysis: FA, MSH, MP

Manuscript preparation: FA

### Conflict of Interest

"The authors declare that they have no competing interests."

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