

## Original Article

# The effectiveness of emotional cognitive-behavioral therapy (ECBT) on reducing test anxiety and its components in students with special learning disabilities

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### Abstract

The purpose of this study was to evaluate the effectiveness of emotion-focused cognitive-behavioral therapy (ECBT) on test anxiety components in students with specific learning disorders (SLD). This research was an experimental study with pre- and post-test and a control group. The population of the present study was all fourth to sixth grade elementary students of two learning disabilities centers under the supervision of education office in district 2 of Rasht who had referred to improve their learning disabilities and were studying in the academic year 2018-2019. The sample included 30 students with specific learning disorders (SLD) who were selected through availability sampling and classified into two groups: experimental group (n=20) and control group (n=20). For data collection, we used Brooks (2015) test anxiety questionnaire. The results of multivariate analysis of covariance (MANCOVA) showed the emotion-focused cognitive-behavioral therapy was effective in reducing the components of test anxiety in students with specific learning disorders. Based on the obtained results, it can be said that emotion-focused cognitive-behavioral therapy can decrease the test anxiety of these students by making changes in inconsistent cognitive thoughts and distortions using emotion regulation techniques.

### Keywords

Specific learning disorders  
Test anxiety  
Emotion-focused cognitive-behavioral therapy

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### Introduction

Testing is ubiquitous in higher education and students' prospects for progression and graduation are dependent upon test performance. Many factors impact test performance (Huntley, Young, Tudur Smith, Jha & Fisher, 2022). Test anxiety is a key determinant of poorer test and academic performance (Roos, Goetz, Voracek, Krannich, & Bieg, 2021). Test anxiety is a situation-specific form of anxiety whereby individuals appraise performance-evaluative situations as threatening (Huntley, et al., 2022). If a person, student, or apprentice becomes anxious or apprehensive about hearing the news of the start of an exam, watching the exam schedule, or taking an exam, we can talk about exam anxiety (Silaj, Schwartz, Siegel & Castel, 2021). Also, test anxiety specifically refers to the specific issue of anxiety associated with achieving high test scores in the educational careers (D'Agostino, Schirripa Spagnolo & Salvati, 2022). Because test scores are so important in assessing students in school, test anxiety has become a global issue in contemporary society. Experimental

evidence has shown a negative relationship between test anxiety and academic achievement, so that highly test anxious individuals react with excessive worry about the consequences of failure, and somatic anxiety symptoms (e.g., muscle tension) in tests (Roos et al., 2021). Worry, the cardinal feature of test anxiety (Huntley et al., 2022), uses mental resources that would be better used for maximising test performance (Prinz, Rafaeeli, Reuter, Bar-Kalifa & Lutz, 2022). Test anxiety interferes directly with the taking of tests, and also influences students' studying style, with test-anxious students more likely adopt a surface-learning approach (Huntley et al., 2022).

A group of students who suffer greatly from test anxiety is students with specific learning disorders (Wang, Li, & Chung, 2021). Specific Learning Disorders (SLD) are considered by the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2014)* as neurodevelopmental disorders that involve difficulties in reading, written expression, and/or mathematics, which have to be quantifiably below the levels expected for the individual's chronological age and may affect academic achievement or daily functioning. Importantly,

psychological literature describes learning difficulties as a risk factor for psychological discomfort: in fact, children who have SLD often report some emotional disturbances (American Psychiatric Association, 2014). Most importantly, psychological literature describes learning disabilities as a risk factor for mental discomfort. In fact, children with SLD often report some emotional disorders (Willcutt & Pennington, 2000; Ghislanzoni, Tobia, Gambarini, Rossi, & Tombini, 2022). Altay and Görker (2018) reported high psychiatric comorbidity (92.5%) in their sample of children and adolescents with a diagnosis of SLD aged between 6 and 15 years. The most frequent psychiatric comorbidity was attention-deficit/hyperactivity disorder (ADHD, 82.3%), followed by specific phobia and oppositional defiant disorder. Importantly, children with 'math disorder' showed a lower intelligence level and higher psychiatric comorbidity. Recently, Sahu, Patil, Sagar and Bhargava (2019) conducted a study on 7 to 12 years old children with SLD-mixed type (reading, writing, and math disorder), showing that 56% of their sample had signs of attention disorder or ADHD; social anxiety was found in one subject, while another child had an oppositional defiant disorder. The authors also reported difficulties in executive functions, peer relations, and aggression (Sahu et al., 2019). Also, literature shows that children with SLD often show internal symptoms such as anxiety and depression, low self-esteem, physical complaints, or emotional withdrawal (Bonifacci, Tobia, Marra, Desideri, & Baiocco, 2020; Dahle & Knivsberg, 2014; Lambert & Dryer, 2018). In addition, previous studies have shown that test anxiety is higher in these people than in their normal peers (Peleg, 2009; Lufi, Okasha & Cohen, 2003; Nelson Lindstrom & Foels, 2015).

As the positive effect of the use of psychotherapy in resolving various psychological problems has been identified, there has been a growing interest in the use of psychotherapy in helping children and adolescents. Among these, one of the effective ways to reduce students' test anxiety is emotion-focused cognitive-behavioral therapy (ECBT) (Torres, Sales, Guerra, Simões Pinto & et al, 2020). ECBT has been developed by Suveg, Jones, Davis, Jacob, and Morelen (2006) and modified in 2018 by Soug et al. (2018). This treatment is a combination of cognitive-behavioral therapy techniques and emotion therapy techniques. Cognitive-behavioral therapies focus on correcting distorted thinking patterns, misconceptions, health-related misbehaviors, and eliminating health risk factors. But in emotion-oriented therapies, the emphasis is on changing or modifying the emotional experience, how the emotion is expressed, and adjusting the intensity or type of emotional experience to suit the emotional event. ECBT emphasizes the skills of recognizing the emotions of oneself and others (emotional awareness), the correct way to express emotion according to social status and reduce the intensity of negative emotions before the response (emotional regulation) and uses other cognitive and behavioral techniques to influence the symptoms of severe negative emotions (Torres et al., 2020). A review

of the literature shows that ECBT has been effective in reducing psychological problems. In this regard, the results of the study by Torres et al. (2020) showed that emotion-focused cognitive-behavioral therapy is effective in comorbid obesity with binge eating disorder. Suveg, Kendall, Comer & Robin (2006) also showed that emotion-focused cognitive-behavioral therapy reduces adolescent anxiety symptoms. Suveg, Jones, Davis, Jacob, and Morelen (2018) in another study concluded that this intervention is effective in improving the anxiety symptoms of young people. Findings from Shafiei, Rezaei, and Sadeghi (2021) also showed that emotion-focused cognitive-behavioral therapy improves affective control in women with generalized anxiety disorder. Atadokht, Gharib Bolouk, Mikaeli & Samadifard (2019) also showed in their research that this type of intervention is effective on social adjustment and experiential avoidance in Iranian disabled veterans. Based on the conclusions of these researchers, ECBT was effective with the emphasis on correcting distorted cognition and teaching new behaviors, understanding excitement, understanding emotion, and adjusting excitement to increase social adjustment and reduce experiential avoidance in disabled veterans. Afshari, Amiri, Neshat Doost, and Rezaie (2015) indicated that group emotion-focused cognitive-behavioral therapy has reduced the symptoms of anger dysregulation and prevented grief and social anxiety and increased effective coping with anger and grief in children.

In general, in the vast majority of studies, the results indicate the effectiveness of ECBT, and this treatment has been used as a desirable goal to improve psychological problems. However, a review of the literature shows that the study of the effectiveness of ECBT on test anxiety in students with SLD in Iran has been neglected. This gap is one of the important reasons for the necessity and importance of studies of the present type at the professional level. Due to the fact that test anxiety interferes with the academic achievement and well-being of students with SLD, therefore, psychological interventions to reduce test anxiety in these students seem necessary. In this study, in order to fill the existing gap, the study of the effect of ECBT on test anxiety can provide researchers with useful information in a better and clearer understanding of the effect of this type of psychological intervention. Therefore, the present study seeks to answer the question: Is emotion-focused cognitive-behavioral therapy effective on the test anxiety components in students with specific learning disorder?

## Method

### Participants

This research was an experimental study with the pre- and post-test with a control group design. In this study, emotion-focused cognitive-behavioral therapy and no treatment were considered as independent variables and test anxiety (along with components) was considered as the dependent variable.

The population of the present study was all fourth to sixth grade elementary students of two learning disabilities centers under the supervision of education in District 2 of Rasht who had referred to improve their learning disabilities and were studying in the academic year of 2018-2019. To select the sample, first, through availability sampling, 30 students with special learning disabilities who had obtained a high score in the test anxiety questionnaire were selected from the mentioned centers. From among, 15 people were randomly selected and allocated to the experimental (n=15 subjects) and control groups (n=15 subjects). The inclusion criteria for selection were education in the fourth to sixth grades of elementary school, not taking certain drugs, informed consent to participate in educational sessions, and having normal intelligence and the exclusion criteria were lack of cooperation with the therapist and not doing the assigned tasks, being absent in the workshops for more than 3 sessions, lack of tendency to continue the therapy, catastrophic events such as death of a family member, divorce etc., drug abuse, and suffering from physical illnesses.

## Instrument

### *Brooks Test and Examination Anxiety Measure (TEAM):*

For both the pre-examination and post-examination surveys, the Test and Examination Anxiety Measure developed by Brooks, Alshafei and Taylor (2015) and Brooks et al. (2015) developed the Test and Examination Anxiety Measure so the complex construct of test anxiety could be comprehensively measured in a more up-to-date population. The current version of the Test and Examination Anxiety Measure consists of 26 Likert scaled prompts rated from 1 = "uncharacteristic of me" to 5 = "characteristic of me" (Brooks et al., 2015). This questionnaire has five subscales related to factors of test anxiety: state anxiety (6 questions), trait anxiety (4 questions), distractibility (4 questions), rumination (4 questions) and worry (6 questions). The Test and Examination Anxiety Measure was statistically compared to both the State-Trait Anxiety Inventory and the Test Anxiety Inventory and was found to be significantly correlated with both, thus making it useful for clinical applications (Brooks et al., 2015). The Test and Examination Anxiety Measure has not only concurrent validity with other measures, but also a reliability coefficient of .90 (Brooks et al., 2015). During the calculation of the overall Test and Examination Anxiety Measure score, some items are reverse-scored (Brooks et al., 2015). Reverse-scoring of survey items has been shown to be beneficial in accommodating the reading ability of participants (Brooks et al., 2015). The Test and Examination Anxiety Measure was used for both the pre-examination and post-examination survey (Brooks et al., 2015). According to Brooks et al. (2015), the Cronbach alpha calculated for the Test and Examination Anxiety

Measure had a reliability coefficient, alpha, of 0.90. The Cronbach alpha is an internal consistency measurement (Fraenkel, Wallen, & Hyun, 2011) and the Test and Examination Anxiety Measure's alpha level was consistent with preferred alpha levels in clinical assessments (Brooks et al., 2015). Pearson's correlation coefficients were calculated for the Test and Examination Anxiety Measure against other well-known and well-established test anxiety measures (Brooks et al., 2015). In particular, the Test and Examination Anxiety Measure (Brooks et al., 2015) was compared to the State-Trait Anxiety Inventory, developed by psychologists Spielberger and Vagg, and has been used in psychological research for decades (Sarason, 1980). Brooks et al.'s Test and Examination Anxiety Measure was also compared to the Trait Anxiety Inventory, again developed by Spielberger in the late 1980s "to measure individual differences in test anxiety as a situation-specific trait" (Brooks et al., 2015). Specifically, the Test and Examination Anxiety Measure correlated significantly ( $p < 0.001$ ) with both the previously validated State-Trait Anxiety Inventory and Trait Anxiety Inventory (Brooks et al., 2015). Therefore, even though relatively new, Brooks et al. (2015) found the Test and Examination Anxiety Measure "shows true potential of being a [test anxiety] measure that clinicians and educational counseling centers may use. The reliability of this questionnaire by Abbott (2016), using Cronbach's alpha method, was 0.90. In the present study, the overall Cronbach's alpha coefficient of this questionnaire was 0.74. Also, this coefficient was obtained for the components of trait anxiety, state anxiety, worry, rumination and distractibility were 0.63, 0.68, 0.49, 0.87 and 0.79, respectively.

### *Procedure*

After obtaining the required license, students who obtained high scores in Test and Examination Anxiety Measure were placed randomly in experimental and control group. After defining our objectives, we asked them to participate in therapeutic sessions. Protecting respondents' confidentiality and their complete freedom to participate were among the ethical issues in this research.

Before starting training sessions both groups were pretested, during which the subjects were asked to fill in the questionnaire. The duration of the emotion-focused cognitive-behavioral therapy sessions lasted each for 45 minutes for 12 sessions which were performed in groups twice a week. At the end of the resilience training course, a post-test was performed for both the two groups under training and the control group and then using SPSS the obtained results were analyzed through Multivariate Analysis of Covariance (MANCOVA); the defined meaningful level was 0.5 for the research. Table 1 shows a summary of the sessions held.

**Table 1.** Summary of Emotion-focused Cognitive-Behavioral Therapy (ECBT)

Session	Session content
1	Familiarity and establishing a therapeutic relationship / Explaining to parents about the purpose and process of treatment / Familiarity with situations that increase negative emotion in students and the type of their reactions in these situations.
2	Introduce the emotion of anxiety and the resulting physical reactions and ask students to express their memories of anxious situations / try to make the feeling of anxiety normal and universal / Introduce and use the intervention workbook
3	Introducing the excitement of joy and grief / The bodily reactions that result from them / Familiarity with the situations that evoke these feelings.
4	Identify the emotion of anger and pride / physical clues and physical responses to them.
5	Introducing guilt / the difference between anxious inner dialogue and adaptive self-talk / teaching challenge with negative thoughts and stopping rumination.
6	Teaching relaxation and its applications in stress management / Teaching problem-solving strategies for managing anxiety
7	Second meeting with parents to review the treatment process / answer parents' questions / encourage them to continue cooperation
8	Introducing self-assessment and rewarding oneself for successes in anxiety management
9	Introducing students' feelings of jealousy / familiarity with the four-step coping model / practicing the model in exciting situations.
10	Applying coping skills in imaginary and real situations that cause moderate anxiety and other exciting experiences (anger).
11	Review the trainings given with the cooperation of the students / Encourage the members to continue the exercises learned during the training course in different situations of personal life.
12	Complete the session and run the post-test

## Results

**Table 2.** Pre-test/post-test mean and standard deviation of test anxiety components among groups under study

Dependent variable	Component	Experiment				Control			
		Pre-test		Post-test		Pre-test		Post-test	
		M	SD	M	SD	M	SD	M	SD
Test Anxiety	Trait anxiety	19.67	2.23	11.10	1.13	18.34	1.25	17.83	1.02
	State anxiety	21.40	3.06	12.43	2.99	22.75	2.95	23.75	2.72
	Distractibility	16.70	1.03	7.20	2.04	16.50	1.16	16.06	1.48
	Rumination	18.47	1.87	10.47	1.50	16.13	16.62	15.75	1.84
	Worry	22.87	1.76	18.07	1.03	21.56	1.54	19.31	2.33
	Total	99.11	6.85	59.27	4.65	95.28	5.35	92.70	5.65

As indicated in table 2, pre-test mean and standard deviation of test anxiety among experimental group are 99.11 and 6.85, respectively; post-test mean and standard deviation of test anxiety among experimental group are 59.27 and 4.65, respectively. Moreover, pre-

test mean and standard deviation of test anxiety among control group are 95.28 and 5.35, respectively; post-test mean and standard deviation of test anxiety among control group are 92.70 and 5.65, respectively.

**Table 3.** The obtained data related to reliability of multivariate analysis of covariance (MANCOVA)

Variable	Effect	Value	Hypothesis df	Error df	F	Sig	Partial Eta Squared
Group	Pillai's Trace	0.981	5	53	209.609	$P \leq 0.001$	0.981
	Wilks' Lambda	0.008	5	53	209.609	$P \leq 0.001$	0.981
	Hotelling's Trace	104.435	5	53	209.609	$P \leq 0.001$	0.981
	Roy's Largest Root	104.435	5	53	209.609	$P \leq 0.001$	0.981

As indicated in table 3, the results of Wilks' Lambda showed that the effect of group is significant on combination of test anxiety components [ $P \leq 0.001$ ,  $F(53 \text{ and } 5) = 209.609$ , Wilks' Lambda = 0.008]. The use of multivariate analysis of covariance (MANCOVA)

was proved by the above test. The results indicated that there is a significant difference at least between one of the components of the variable related to the groups under study.

**Table 4.** The results of Box's Test of Equality of Covariance Matrices and Levene's Test of Equality of Error Variances in test anxiety components

Box's M Test	df1	df2	F	Sig
15.225	13	13576.189	1.747	0.453
Levene's Test	df1	df2	F	Sig
Trait anxiety	1	62	1.553	0.330
State anxiety	1	62	1.689	0.515
Distractibility	1	62	1.989	0.167
Rumination	1	62	0.456	0.165
Worry	1	62	0.378	0.553

Based on table 4, before using parametric test of multivariate covariance analysis, for observing its hypotheses, we used Box and Levene's tests. Based on

Box's test, which was significant for none of the research variables, the condition of equality was correctly observed for variance/covariance matrices ( $P =$



0.453,  $F = 1.747$  and  $\text{Box} = 15.225$ ). Based on Levene's test, which was significant for none of the variables, the

condition of equality was correctly observed for intergroup variances.

**Table 5.** The results of multivariate covariance analysis (MANCOVA) for components of test anxiety in experimental and control groups

Dependent variable	Components	Source	Ss	df	MS	F	Sig
Test Anxiety	Trait anxiety	Pre-test	1.662	1	1.662	0.274	0.603
		Group	1986.668	1	1986.668	326.998	0.001
	State anxiety	Pre-test	8.898	1	8.898	2.257	0.456
		Group	982.901	1	982.901	249.264	0.001
	Distractibility	Pre-test	3.995	1	3.995	0.697	0.123
		Group	1479.037	1	1479.037	1479.037	0.001
	Rumination	Pre-test	0.130	1	0.130	0.021	0.884
		Group	1813.740	1	1813.740	319.836	0.001
	Worry	Pre-test	2.237	1	2.237	0.368	0.546
		Group	1650.721	1	1650.721	220.502	0.001

Based on table 5 and after moderating pre-test scores, the results of post-test related to emotion-focused cognitive behavioral therapy have significant impact on components of trait anxiety ( $P < 0.001$ ,  $F = 326.998$ ), state anxiety ( $P < 0.001$ ,  $F = 249.264$ ), distractibility ( $P < 0.001$ ,  $F = 1479.037$ ), rumination ( $P < 0.001$ ,  $F = 319.836$ ) and worry ( $P < 0.001$ ,  $F = 220.502$ ); therefore it can be concluded that in comparison to control group, emotion-focused cognitive behavioral therapy decrease test anxiety of students with specific learning disorder (experimental group) in the post-test phase.

## Discussion

The aim of this study was to evaluate the effectiveness of emotion-focused cognitive-behavioral therapy (ECBT) on test anxiety components in students with specific learning disorder (SLD). The results showed that ECBT reduced test anxiety in students with SLD. This finding is in line with the findings of [Torres et al. \(2020\)](#), [Suveg et al. \(2018\)](#), [Shafiei et al. \(2021\)](#), [Atadokht et al. \(2019\)](#) and [Afshari et al. \(2015\)](#) which indicate the effectiveness of this therapeutic method in psychological problems of students with SLD.

In explaining the present results, we can point to the key idea that governs emotion-focused cognitive-behavioral therapy, according to which the underlying mechanism of anxiety disorders is assumed to be Failures in emotion regulation ([Brown, Forman, Herbert & Hoffman, 2011](#)). Therefore, the techniques of this therapeutic approach can help students with SLD who show more emotional problems and are significantly weaker in identifying, describing, and thinking objectively about their emotions than their normal counterparts ([Moradi, Sadri Damirchi, & Mohammadi, 2018](#)). ECBT helps a person learn how to deal with negative emotions and feelings such as anxiety in a healthy way in a number of steps and to cope with the stressful conditions of the test environment by reducing the intensity of negative ([Jelvehzadeh, Dogaheh, Bernstein, Shakiba, & Ranjbar, 2022](#)).

In other words, it can be generally said that when a person is affected by very intense emotions ([Brooks et al., 2015](#)), the mind reduces the amount of stress caused by emotions by withdrawing attention from the task, so,

distraction occurs. ECBT skills training increases the ability of people to tolerate and accept negative emotions and the tendency to deal with anxiety-causing situations by increasing people's awareness of their feelings ([Sauer-Zavala, Southward & Semcho, 2020](#)). Also, these trainings can prevent the reduction of cognitive resources in the person through assessment before the occurrence of an emotional event such as an exam, which also prevents distraction and thus reduces test anxiety ([Berking, Margraf, Ebert, Wupperman, & Hofmann, 2011](#)). This process also reduces impulsive behaviors in students with SLD, improves their focus on homework, and reduces their anxiety ([Sauer-Zavala et al., 2022](#)).

In addition, ECBT seeks to make students with SLD aware of disturbed thoughts and anxieties that arise before and during the test. Students with SLD are clearly instructed to eliminate maladaptive self-talk that is projected in stressful situations and to develop relatively optimistic ways of interpreting themselves, especially during exams. During treatment, clients are encouraged to question their distressing thoughts and design alternative self-talk to deal with test anxiety ([Jelvehzadeh et al., 2022](#)). Also, regarding the effectiveness of ECBT, it can be said that cognitive techniques teach clients to identify their anxious thoughts and to test them objectively. The therapist tries to confront the student with new information that he or she has previously ignored. These techniques help students correct their own misinterpretations of environmental events and create new interpretations ([Reiss, Warnecke, Tolgou, Krampen, & Luka-Krausgrill, 2017](#)). Students learn that complexity and ambiguity characterize most life situations. Thus, they learn to tolerate this ambiguity and uncertainty and to have more cognitive flexibility. Finally, these individuals use these new cognitive perspectives as a different coping response to anxious events.

## Conclusion

It can be said that ECBT with a rich source of behavioral exercises has the potential to enhance students' sense of self-efficacy by reinforcing and teaching positive and potential characteristics of

individuals and in turn reduces test anxiety (Ugwuanyi, Ede, Onyishi, Ossai, & Nwokenna, 2020). In the cognitive-behavioral approach, the underlying assumption is that cognitive change also leads to behavioral and emotional changes (Reiss et al., 2017). Therefore, since test anxiety is a negative emotion and causes student fatigue and fear in the test and in relation to academic subjects, this approach can lead to emotional and behavioral changes and reduce test anxiety by modifying dysfunctional cognitive components that increase test anxiety (Von Der Embse, Barterian, & Segool, 2013).

Overall, what was obtained from summarizing the results of this study is that ECBT through cognitive-emotional mechanism is effective in reducing test anxiety in students with SLD and is a good way to improve their academic performance. It can also be considered as a way to prevent students' psychological disorders and social problems. So that this treatment can be used as one of the psychological interventions along with other interventions.

This research was only limited to learning disability centers in Rasht, Iran, which makes it difficult to generalize its results to other centers and cities. Moreover, the research was only conducted on sixth grade elementary students with specific learning disorder; hence we should be careful in generalizing the results to other age groups. Lack of follow up study is another limitation in this research. Hence, it is suggested to conduct similar researches in other provinces in Iran to generalize the findings. Moreover, it is suggested to conduct similar research with bigger sample size in male and female students and different age groups. It is suggested that ECBT be planned and considered by psychologists and counselors to improve the academic and psychological problems of these students and increase relationships with peers in schools and families. Implementation of the follow-up period is another research proposal.

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## References

- Abbott, M. (2016). *Mitigating the Effects of Test Anxiety through a Relaxation Technique Called Sensory Activation* (Doctoral dissertation, Lindenwood University).
- Afshari, A., Amiri, S., Neshat Doost, H. T., & Rezaie, F. (2015). Comparing effectiveness of group emotion-focused cognitive-behavioral therapy and group cognitive-behavioral therapy on children with social anxiety disorder. *Studies in Medical Sciences, 26*(3), 194-204.
- Altay, M. A., & Görker, I. (2018). Assessment of psychiatric comorbidity and WISC-R profiles in cases diagnosed with specific learning disorder according to DSM-5 criteria. *Archives of Neuropsychiatry, 55*(2), 127-134. doi:10.5152/npa.2017.18123
- Atadokht, A., Masoumeh, G. B., Mikaeli, N., & Samadifard, H. R. (2019). Effect of Emotion-focused Cognitive Behavioral Therapy on Social Adjustment and Experiential Avoidance in Iranian Disabled Veterans. *Military Caring Sciences Journal, 6*(3), 176-186. doi:10.29252/mcs.6.3.3
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed., Text Rev.)*. Washington, DC: Author.
- Berking, M., Margraf, M., Ebert, D., Wupperman, P., Hofmann, S. G., & Junghanns, K. (2011). Deficits in emotion-regulation skills predict alcohol use during and after cognitive-behavioral therapy for alcohol dependence. *Journal of consulting and clinical psychology, 79*(3), 307-318. doi:10.1037/a0023421
- Bonifacci, P., Tobia, V., Marra, V., Desideri, L., Baiocco, R., & Ottaviani, C. (2020). Rumination and emotional profile in children with specific learning disorders and their parents. *International journal of environmental research and public health, 17*(2), 389-402. doi:10.3390/ijerph17020389
- Brown, L. A., Forman, E. M., Herbert, J. D., Hoffman, K. L., Yuen, E. K., & Goetter, E. M. (2011). A randomized controlled trial of acceptance-based behavior therapy and cognitive therapy for test anxiety: A pilot study. *Behavior modification, 35*(1), 31-53. doi:10.1177/0145445510390930
- D'Agostino, A., Schirripa Spagnolo, F., & Salvati, N. (2022). Studying the relationship between anxiety and school achievement: evidence from PISA data. *Statistical Methods & Applications, 31*(1), 1-20. doi:10.1007/s10260-021-00563-9
- Dahle, A. E., & Knivsberg, A. M. (2014). Internalizing, externalizing and attention problems in dyslexia. *Scandinavian Journal of Disability Research, 16*(2), 179-193. doi:10.1080/15017419.2013.781953
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. (2011). *How to design and evaluate research in education* (8th ed.). New York, NY: McGraw-Hill Education
- Ghislanzoni, L., Tobia, V., Gambarini, A., Rossi, E., Tombini, G., & Ogliari, A. (2022). The psychopathological profile of children with specific learning disorders: the point of view of children and their mothers. *European Journal of Special Needs Education, 37*(1), 89-103. doi:10.1080/08856257.2020.1847764
- Huntley, C., Young, B., Tudur Smith, C., Jha, V., & Fisher, P. (2022). Testing times: the association of intolerance of uncertainty and metacognitive beliefs to test anxiety in college students. *BMC psychology, 10*(1), 1-7. doi:10.1186/s40359-021-00710-7

- Jelvehzadeh, F., Dogaheh, E. R., Bernstein, C., Shakiba, S., & Ranjbar, H. (2022). The effect of a group cognitive behavioral therapy on the quality of life and emotional disturbance of women with breast cancer. *Supportive Care in Cancer*, *30*(1), 305-312. doi:10.1007/s00520-021-06421-4
- Lambert, D. C., & Dryer, R. (2018). Quality of life of higher education students with learning disability studying online. *International Journal of Disability, Development and Education*, *65*(4), 393-407. doi:10.1080/1034912X.2017.1410876
- Lufi, D., Okasha, S., & Cohen, A. (2004). Test anxiety and its effect on the personality of students with learning disabilities. *Learning disability quarterly*, *27*(3), 176-184. doi:10.2307/1593667
- Moradi, M., Sadri Damirchi, E., & Mohammadi, N. (2018). Effectiveness of Eye movement desensitization and reprocessing on cognitive emotion regulation and test anxiety in students with learning disabilities. *Journal of Learning Disabilities*, *7*(3), 110-129. doi:10.22098/JLD.2018.630
- Nelson, J. M., Lindstrom, W., & Foels, P. A. (2015). Test anxiety among college students with specific reading disability (dyslexia) nonverbal ability and working memory as predictors. *Journal of Learning Disabilities*, *48*(4), 422-432. doi:10.1177/0022219413507604
- Peleg, O. (2009). Test anxiety, academic achievement, and self-esteem among Arab adolescents with and without learning disabilities. *Learning disability quarterly*, *32*(1), 11-20. doi:10.2307/25474659
- Prinz, J., Rafaeli, E., Reuter, J. K., Bar-Kalifa, E., & Lutz, W. (2022). Physiological activation and co-activation in an imagery-based treatment for test anxiety. *Psychotherapy Research*, *32*(2), 238-248. doi:10.1080/10503307.2021.1918353
- Reiss, N., Warnecke, I., Tolgou, T., Krampen, D., Luka-Krausgrill, U., & Rohrmann, S. (2017). Effects of cognitive behavioral therapy with relaxation vs. imagery rescripting on test anxiety: A randomized controlled trial. *Journal of affective disorders*, *208*, 483-489. doi:10.1016/j.jad.2016.10.039
- Roos, A. L., Goetz, T., Voracek, M., Krannich, M., Bieg, M., Jarrell, A., & Pekrun, R. (2021). Test anxiety and physiological arousal: a systematic review and meta-analysis. *Educational Psychology Review*, *33*(2), 579-618. doi:10.1007/s10648-020-09543-z
- Sahu, A., Patil, V., Sagar, R., & Bhargava, R. (2019). Psychiatric comorbidities in children with specific learning disorder-mixed type: A cross-sectional study. *Journal of neurosciences in rural practice*, *10*(04), 617-622. doi:10.1055/s-0039-1697879
- Sauer-Zavala, S., Southward, M. W., & Semcho, S. A. (2022). Integrating and differentiating personality and psychopathology in cognitive behavioral therapy. *Journal of Personality*, *90*(1), doi:10.1111/jopy.12602
- Shafiei, M., Rezaei, F., & Sadeghi, M. (2021). Effectiveness of the Newly Developed Treatment Contrast avoidance of worry and Emotion-focused Cognitive Behavioral Therapy in Affective control in Women with Generalized Anxiety Disorder. *Journal of Modern Psychological Researches*, *15*(60), 62-75. doi:10.1007/s10648-021-09598-6
- Silaj, K. M., Schwartz, S. T., Siegel, A. L., & Castel, A. D. (2021). Test Anxiety and Metacognitive Performance in the Classroom. *Educational Psychology Review*, *33*(4), 1809-1834. doi:10.1007/s10648-021-09598-6
- Suveg, C., Jones, A., Davis, M., Jacob, M. L., Morelen, D., Thomassin, K., & Whitehead, M. (2018). Emotion-focused cognitive-behavioral therapy for youth with anxiety disorders: A randomized trial. *Journal of abnormal child psychology*, *46*(3), 569-580. doi:10.1007/s10802-017-0319-0
- Suveg, C., Kendall, P. C., Comer, J. S., & Robin, J. (2006). Emotion-focused cognitive-behavioral therapy for anxious youth: A multiple-baseline evaluation. *Journal of Contemporary Psychotherapy*, *36*(2), 77-85. doi:10.1007/s10879-006-9010-4
- Torres, S., Sales, C., Guerra, M. P., Simões, M. P., Pinto, M., & Vieira, F. M. (2020). Emotion-focused cognitive behavioral therapy in comorbid obesity with binge eating disorder: A pilot study of feasibility and long-term outcomes. *Frontiers in Psychology*, *11*, 343-345. doi:10.3389/fpsyg.2020.00343
- Ugwuanyi, C. S., Ede, M. O., Onyishi, C. N., Ossai, O. V., Nwokenna, E. N., Obikwelu, L. C., ... & Nweke, M. L. (2020). Effect of cognitive-behavioral therapy with music therapy in reducing physics test anxiety among students as measured by generalized test anxiety scale. *Medicine*, *99*(17), 1-8. doi:10.1097/md.00000000000016406
- Von Der Embse, N., Barterian, J., & Segool, N. (2013). Test anxiety interventions for children and adolescents: A systematic review of treatment studies from 2000–2010. *Psychology in the Schools*, *50*(1), 57-71. doi:10.1002/pits.21660
- Wang, L. C., Li, X., & Chung, K. K. H. (2021). Relationships between test anxiety and metacognition in Chinese young adults with and without specific learning disabilities. *Annals of Dyslexia*, *71*(1), 103-126. doi:10.1007/s11881-021-00218-0
- Willcutt, E. G., & Pennington, B. F. (2000). Psychiatric comorbidity in children and adolescents with reading disability. *The Journal of Child Psychology and Psychiatry and Allied Disciplines*, *41*(8), 1039-1048. doi:10.1111/1469-7610.00691