



Educational Psychology in Practice

theory, research and practice in educational psychology

ISSN: 0266-7363 (Print) 1469-5839 (Online) Journal homepage: <http://www.tandfonline.com/loi/cepp20>

The Effectiveness of Integrated Training Programme (ITP) in Decreasing Female Students' Test Anxiety: Moderating Effect of Mothers' Perfectionism

Narges Pourtaleb, Mahmoud Mirnasab & Yaser Hadidi

To cite this article: Narges Pourtaleb, Mahmoud Mirnasab & Yaser Hadidi (2018): The Effectiveness of Integrated Training Programme (ITP) in Decreasing Female Students' Test Anxiety: Moderating Effect of Mothers' Perfectionism, Educational Psychology in Practice

To link to this article: <https://doi.org/10.1080/02667363.2018.1468734>



Published online: 03 Jun 2018.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)



The Effectiveness of Integrated Training Programme (ITP) in Decreasing Female Students' Test Anxiety: Moderating Effect of Mothers' Perfectionism

Narges Pourtaleb^a, Mahmoud Mirnasab^b and Yaser Hadidi^c

^aDepartment of Education, Faculty of Education and Psychology, University of Tabriz, Tabriz, Iran; ^bFaculty of Education and Psychology, Department of Psychology and Education of Exceptional Children, University of Tabriz, Tabriz, Iran; ^cFaculty of Persian Literature and Foreign Languages, Department of English, University of Tabriz, Tabriz, Iran

ABSTRACT

This study examined the effectiveness of an integrated training programme (ITP) in reducing female students' test anxiety with a view to the mothers' perfectionism as a moderating factor. A total of 60 primary school students (30 mothers with perfectionism trait and 30 mothers without perfectionism) were randomly selected using multi-stage cluster sampling and screening methods. Spielberger's Test Anxiety Scale and Multidimensional Perfectionism Scale (MPS) were administered to the students and mothers, respectively. The participants were placed into four groups (two experimental and two control groups). The experimental groups received intervention in 14 sessions. The results suggested significant differences between experimental and control groups, but there was no significant difference between the two experimental groups (group 1: students with test anxiety and perfectionist mothers and group 2: students with test anxiety and non-perfectionist mothers). The moderating effect of mothers' perfectionism was not statistically confirmed. Implications of the study are discussed.

KEYWORDS

Test Anxiety; Mothers' Perfectionism; Integrated Training Programme (ITP)

Introduction

Test anxiety is one of the most pressing educational issues affecting students across the world (Yeo, Goh, & Liem, 2016). This problem is a relatively stable trait that is associated with performance evaluation in several test-related situations, such as school exams and IQ tests (Lang & Lang, 2010). Test anxiety is subsumed under severe anxieties and can contribute to avoidance behaviours. It is a disorder which is a multi-dimensional construct consisting of cognitive, affective, and behavioural components (Soyas & Weiss, 2014). Liebert and Morris (1967, as cited by Cassady & Holmes Finch, 2015) have proposed two main components of test anxiety to be worry and emotionality.

Worry is the cognitive aspect of test anxiety representing certain factors, such as cognitive rumination and dissatisfaction with self, distraction during learning or taking a test, and

deficient cognitive processing (Baghaei & Cassady, 2014); whereas emotionality describes somatic symptoms and tension (Nelson, Lindstorm, & Patricia, 2014). In fact, the main characteristic of students with test anxiety is the cognitive aspect of the anxiety (worry), involving the embracing of negative self-evaluation on the part of the student (Mousavi, Hagshenas, & Alishahi, 2008).

Test anxiety is a pervasive educational problem among students, with prevalence rates ranging from 10% to 40% (Yeo et al., 2016). In sum, cumulative evidence has indicated an increasing trend of test anxiety, which has resulted in the rates of underachievement being raised in students (Baghaei & Cassady, 2014). Gender differences have also been observed in several studies, with the prevalence rate being particularly highest in girls (Asghari, Abdul Kadir, Elias, & Baba, 2012; Baghaei & Cassady, 2014).

Several factors influence test anxiety: one of the major and relevant constructs of test anxiety is a perfectionistic personality trait (Arana & Furlan, 2016; Flett, Coulter, Hewitt, & Nepon, 2011; Roohafza et al., 2012; Stoeber, Feast, & Hayward, 2009). Perfectionism is a personality trait characterised by a person's striving for flawlessness and setting overly high performance standards, accompanied by excessively negative self-evaluations and concerns about others' evaluations (Stoeber, Hoyle, & Last, 2013). According to social learning theory, a perfectionist personality is the product of complex interactions between individual characteristics and the social context, which can include family situation and school climate (Lozano, Valor- Segura, & Lozano, 2015).

The role of students' perfectionism in test anxiety has been examined in several studies (Flett et al., 2011). Few studies have evaluated the role of parents' perfectionism (Affrunti, Geronimi, & Woodruff- Borden, 2015), and mothers' perfectionism (Samiei Sarkhanlou, Kiamanesh, & Ahadi, 2015) on children's anxiety. Both these studies have managed to document the significant association between these variables. In other words, the mediating effect of perfectionism on the treatment function of test anxiety has been documented, leading to the assumption that parents' perfectionism has, in some way, interfered with the treatment function of test anxiety. Evidence from research indicates that rigid adherence to unreasonable standards among perfectionists can have negative impacts on the treatment outcome (Ashbaugh et al., 2007; Chik, Whittall, & O'Neill, 2008).

Test anxiety can contribute to several negative consequences such as: low motivation, negative self-evaluation beliefs, increased general anxiety (Asghari et al., 2012), tension, and autonomic nervous system agitation. It could have detrimental effects on attention and concentration, and might hinder students' progress in learning (Khalaila, 2015). Some students actually commit suicide simply because of test anxiety (Mousavi et al., 2008). Considering such negative consequences and the high incidence of test anxiety, it is essential to establish an effective intervention to mitigate this problem, as well as its effects, among students,

Behavioural methods, such as relaxation and systematic desensitisation, have been utilised in initial studies on test anxiety. Following the behavioural methods, cognitive methods have been employed in training test anxiety. Study skills training has also been considered essential in the treatment of test anxiety (Asghari et al., 2012). However, more emphasis has been recently placed on the importance of integrated training methods (Asghari et al., 2012; von der Embse, Barterian, & Segool, 2013; Poorgholami & Fatehi, 2014). Given that test anxiety involves cognition, emotion, and affection, and contains biological and physiological

elements, it seems legitimate to conduct integrated training methods for treatments of test anxiety.

Prior integrated treatments took into account the behavioural and cognitive dimensions of test anxiety (Kennedy & Doepke, 1999; Poorgholami & Fatehi, 2014). In this vein, Poorgholami and Fatehi (2014) asserted the positive effect of combining two methods (systematic desensitisation and study skills training) on students' test anxiety. Furthermore, Kennedy and Doepke (1999) maintained that a multi-faceted training method (relaxation, systematic desensitisation and cognitive-behavioural intervention) proves to have significant effects on alleviating test anxiety.

However, despite the numerous interventions undertaken, many students' test anxiety problems still remain unsolved. Thus, it is essential to design a programme that covers all the dimensions of this problem and could mitigate the potential impact of otherwise failing previous interventions. There is a shortage of studies examining the effectiveness of integrated training methods on test anxiety; existing research has considered only two dimensions of test anxiety. Additionally, in most research conducted on test anxiety, the moderating effects of parents' perfectionism has not been considered.

It is in the light of these shortcomings that the current research was undertaken. It aims to fill the existing gap in the literature by developing an innovative multi-faceted intervention that comprehensively covers all dimensions of test anxiety, examining the moderating effect of mothers' perfectionism on female students' test anxiety. The reason for selecting female students was the high prevalence of test anxiety among female students (Putwain, 2007). Thus, the research question in this study seeks to examine whether integrated training programmes for anxiety control can decrease test anxiety in students with perfectionist mothers.

Method

Participants

The statistical population consisted of sixth grade female students in primary schools located in a city in Iran.

Procedure

Two municipal districts were selected as the representative sample of primary schools in Tabriz (Iran). In order to implement the research, the granting of ethical approval from the respective education ministries was acquired. Then the school principals were informed about the purpose of the research and asked their permission to collect data from the students, which was granted. Using multi-stage cluster sampling method, initially, 550 students were randomly selected from three schools.

First, anonymity was assured for the students. Then, the students completed the test anxiety questionnaire (encoded with a unique identification number). After this, the students took the perfectionism questionnaire (with each student's identification code) home. A consent form explaining the aim of the study accompanied the questionnaire. Mothers were assured that their child's anonymity would be protected.

Upon returning the questionnaires, primary scoring was conducted in order to identify students with test anxiety as well as mothers with perfectionist traits. 60 students were then selected; 30 students with test anxiety and perfectionist mothers, and 30 students with test anxiety whose mothers did not have perfectionist traits.

These students were randomly assigned to two experimental and two control groups. The experimental groups included 15 students with perfectionist mothers in experimental group 1, and 15 students with mothers lacking this trait in experimental group 2. The control groups included 15 students with perfectionist mothers in control group 1, and 15 students with mothers who did not have this trait in control group 2. Grouping was based on the following scores: students' test anxiety, mothers' perfectionism trait, IQ, gender (female), educational grade (sixth grade), and not receiving any intervention or medicine. A justification for the sample size is that, in the pilot study, the variance among the groups was low; similarly, 15 to 20 subjects were acceptable for statistical power (Delavar, 2015).

Finally, during a brief session, the implementation process was duly explained to mothers and students. After acquiring students' and mothers' consent, the Raven IQ test was administered to all students. The IQ-test was conducted to match samples randomly assigned to experimental and control groups. Group matching was performed using variance analysis ($F=2.16$, $P=0.1$). Eventually, after grouping samples, a treatment protocol (ITP) was established for experimental groups during 14 sessions (each session of 40 min). Control groups did not receive any intervention. The training was conducted in group format at two schools. Students received a homework task at the end of each session. Post-test was administered to all groups, one week after completion of the treatment. The training package was also given to control groups at the end of the programme.

Training package

The approach of the package involved a combination of different test anxiety treatment methods. The aim of designing this package was to influence multifaceted aspects of test anxiety. Initially, theoretical and experimental foundations underlying test anxiety were studied. Afterwards, some sources addressing intervention on test anxiety as well as recent meta-analysis studies were consulted and reviewed (Friedberg, 2009; Heiser et al., 2015; Zeidner, 2004; Zeidner & Matthews, 2011).

The number of studies addressing a combined approach is limited in Iran and most research is conducted with only one treatment method in target groups. This was why foreign scholars were contacted via email so as to benefit from their experiences. Eventually, the methods incorporated in this study came to adopt the following shape: behavioural intervention (progressive muscular relaxation, imaginative systematic desensitisation), cognitive intervention (recognising negative thoughts, cognitive restructuring) and educational training (increasing concentration during study, creating study plans, how to prepare for an exam after and before taking a test, training SQ4R study method).

Regarding the rationale for selecting the methods, and the reason for their primacy and recency; it should be noted that many students suffer from physiological symptoms of test anxiety, so in the first step, behavioural intervention was conducted. Initially, muscular relaxation was trained, because muscular relaxation is the major element of systematic desensitisation. Cognitive intervention was then implemented in line with its procedure in other studies.

After all this, the educational intervention was started. Originally, it is concentration that receives training in this intervention, since it has an important role both during studying and taking a test. Next, scheduling and SQ4R study method was taught. Eventually, the designed package was provided to eight professors of psychology to determine content and face validity. Then the proposed items were corrected by the researcher. A validity coefficient was computed using social validity, which is implemented for assurance regarding these issues: 1) an important problem has been checked, 2) Intervention methods have been approved, and 3) Intervention outcome has been satisfactory. As indicated previously, this training intervention was implemented in 14 sessions (each session lasting 40 min), applied to the two experimental groups.

The organisation of the training programme

The training programme contains the following phases:

1. Introducing the members, expressing the aim of the sessions, and presenting an overall introduction regarding: (a) anxiety, test anxiety and its effects on the academic performance of students; (b) a brief review of anxiety coping methods and, (c) starting the relaxation training.
2. Training students to persevere with the relaxation technique, and to make a hierarchy of test anxiety (stating the situations and items in which worry about exams is created. Then rating these situations from lowest to highest).
3. Reviewing the relaxation technique and implementing imaginative systematic desensitisation (providing a hierarchy of anxiety from weakest to strongest, reaching complete relaxation, imagining the lowest anxiety-driven situations, getting restored to relaxation state and again imagining the same situation and repeating these steps until feeling complete relaxation during the imagining of that situation).
4. Reviewing relaxation and completing implementation of imaginative systematic desensitisation.
5. Reviewing imaginative systematic desensitisation, searching for negative thoughts, and providing a list of them (imagining the latest experience of the test session with all its details and recording thoughts in those moments).
6. Training methods to discontinue negative thoughts and replace them with positive thoughts (cognitive restructuring, methods such as logical struggling with negative thoughts, stopping negative thoughts, self-admiration and using positive sentences, expecting low anxiety during a test).
7. Reviewing whole sessions of the programme and training methods to increase concentration (creating study habits, having a specified place and time for studying, having relaxation periods, strengthening study behaviour and studying in exam-simulated situations).
8. Reviewing methods to increase concentration.
9. Reviewing how to schedule, manage time and prepare for exams, and training SQ4R study method (preview, question, read, reflect, recite, and review).
10. Reviewing relaxation and imaginative systematic desensitisation.
11. Reviewing negative thoughts' removal and cognitive restructuring.

12. Reviewing relaxation, imaginative systematic desensitisation, removing negative thoughts and cognitive restructuring.
13. Reviewing training methods, checking daily life techniques and problems that the client is faced with. Providing solutions to problems.
14. Exercise and apply practically all the methods and skills that students have trained for over the 13 sessions in the classroom.

Measures

Spielberger Test Anxiety Inventory

The Test Anxiety Inventory was developed by Pourtaleb & Mirnasab (2017), consisting of 20 items. This inventory is a self-report questionnaire that contains two sub-scales: worry and emotionality. Each response is scored in a 4-point scale: (1) almost never, (2) sometimes, (3) often, (4) almost always. The total score of this inventory ranges from 20 to 80 points. As this test does not have any diagnostic cut-off point, after computing mean scores in primary sampling (40.5), those whose scores were higher than the mean (50–80) were identified as students with test anxiety. Abolghasemi (2002) translated and validated this questionnaire in Iran. The reliability coefficient of the test was measured on a sample of male and female Iranian students. The analysis of the data revealed that a reliability coefficient was higher than 0.92. Moreover, Cronbach reliability of the questionnaire in this study was computed as 0.82.

Multidimensional perfectionism scale

The Multidimensional Perfectionism Scale is a 30-item self-report questionnaire, originally developed by Hewitt and Flett in 1991. The first 10 items of the scale measure self-centred perfectionism; the items 11–20 measure other-centred perfectionism; items 21–30 measure social-centred perfectionism. The responses obtained in a 5-point Likert scale are quantified from “strongly disagree” to “strongly agree” respectively. A low level of perfectionism was characterised by scores ranging from 30 to 60. A medium level ranged from 60 to 90, and a high level is over 90. Hewitt and Flett (1991) conducted a study on samples of 263 subjects. Internal consistency of the total items was considered acceptable for the samples: self-centred perfectionism equaled 0.88, other-centred perfectionism 0.74, and social-centred perfectionism 0.81. Further, test-retest reliability of this questionnaire for the three dimensions of perfectionism was as follows: self-centred perfectionism equaled 0.69, other-centred perfectionism 0.66, and social-centred perfectionism 0.60. In primary validation of this scale in Iran and on college students (Besharat, 2002), the correlation coefficient between subjects’ scores in two sessions with four-week interval was as follows: self-centred perfectionism equaled 0.88, other-centred perfectionism 0.83, and social-centred perfectionism 0.80. Moreover, Cronbach reliability of the questionnaire in this study was 0.82.

Results

The results of descriptive analysis are shown in table 1.

Table 1. Descriptive statistics of test anxiety separated in group and test type.

	pretest		post-test		N
	mean	SD	mean	SD	
Experimental group(1)	61.53	5.93	40.86	11.22	15
control group(1)	61.60	7.11	60.13	11.51	15
Experimental group(2)	57.93	5.32	37.26	7.20	15
control group(2)	56.13	4.41	58.07	8.92	15
Total	59.3	6.11	49.08	14.03	60

Table 2. Results of covariance analysis to compare test anxiety in the experimental and control groups.

Source changes	SS	df	MS	F	sig	η_p^2	Observed Power
group	5442.34	3	1814.11	19.55*	0.0001	0.52	1
error	5011.85	54	92.81				

*p<.05

As shown in table 1, the means and standard deviation of the test anxiety variable decreased considerably from pretest to posttest phase in both experimental groups, compared with two control groups. Using one-way covariance, the scores of post-test test anxiety were controlled. Also, the data related to incorporating the treatment method in test anxiety were analysed. Initially, the Kolmogorov–Smirnov test was conducted in order to examine the assumptions of covariance analysis.

The results revealed the normal distribution of variables in the group (pretest=1.18, sig=0.12, post-test=0.7, sig=0.7). Moreover, Levene's test was utilised to assess the homogeneity of variances. The results, as can be seen in Table 2, indicated that there were no significant differences in the variances ($F=1.31$, $P=0.28$). The assumptions regarding the homogeneity of interactive effects were acquired, as F (resulting from interactive effects) was not significant at values less than 0.05 level. Furthermore, the assumptions of homogeneity of regression slopes were acquired, as regression slopes of this variable were parallel and cumulative in the groups studied.

The univariate analysis of covariance indicated that the effects of ITP on improving test anxiety symptoms were significant in the studied groups ($F = 19.55$, $P < 0.05$). However, with respect to the partial Eta value ($\eta^2 = 0.52$) it can be inferred that the integrated training programme can interpret 52 percent of variances in the dependent variables.

According to Table 3, the pairwise comparisons table, regarding the level of test anxiety, no significant differences were observed between experimental groups 1 and 2. However, there were between-groups differences as follows:

Table 3. Results of Bonferroni Post hoc test and paired comparisons of test anxiety scores.

Groups		Mean Difference	Std. Error	sig
Experimental group(1)	Control group(1)	*-18.67	3.56	0.0001
	Experimental group(2)	1.37	3.66	1
	Control group(2)	*-19.38	3.72	0.0001
Control group(1)	Experimental group(2)	*20.04	3.79	0.0001
	Control group(2)	-0.71	3.75	1
Experimental group(2)	Control group(1)	*-20.04	3.79	0.0001
	Control group(2)	*-20.75	3.62	0.0001
Control group(2)	Control group(1)	0.71	3.75	1

*p<.05

between experimental group 1 and control group 1, with a mean difference score of 18.67; between experimental group 1 and control group 2, with a mean difference score of 19.38; between experimental group 2 and control group 1, with a mean difference score of 20.04, and, also, between experimental group 2 and control group 2, with a mean difference score of 20.75.

However, no significant differences were observed between the control groups. Thus, the mothers' perfectionism variable does not seem to play a moderating role in reducing students' test anxiety. In this regard, the ITP has effects on decreasing students' test anxiety even when considering the moderating role of mothers' perfectionism. Therefore, the response to the second part of the research question is negative.

Discussion

The study was conducted to evaluate the effects of ITP on students' test anxiety performance, considering the moderating effect of mothers' perfectionism. The results indicated that test anxiety of experimental groups, who received the integrated treatment package, decreased significantly in the post-test. Therefore, findings suggested that the combination of behavioural, cognitive and educational methods reduced students' test anxiety. Regarding the effectiveness of the integrated method, the findings are partially in agreement with those of previous studies suggesting that the combination of two methods have beneficial effects on the reduction of students' test anxiety (Brown et al., 2011; Cheek, Badley, Reynolds, & Coy, 2002; Kennedy & Doepke, 1999; Poorgholami & Fatehi, 2014).

The results could be interpreted by Zeidners' test anxiety theory (1998) as showing that multiple dimensions of test anxiety require multifaceted training methods, and these interventions could be more efficient when synchronously and integratively presented.

Considering the role of relaxation in this intervention, it could be concluded that this method may be an effective intervention in reducing test anxiety and could help students identify and change several automatic body responses. Moreover, progressive muscular relaxation enables the body to produce natural chemicals which can restore cellular lesions and dispose toxic substances. Furthermore, relaxation can strengthen mental powers and self-confidence, contributing to the pursuit of inner talents and improving reasoning abilities and creativity (Zargarzadeh & Shirazi, 2014).

Additionally, systematic desensitisation is a well-known and frequently used treatment technique in psychology. This technique reduces students' test anxiety by impacting on cognitive and psychological mechanisms. In this process, when muscular relaxation is accompanied with imagination of anxious scenes, autonomic arousal can be inhibited, and a new response for conditioning to prior anxious stimulus can be provided (Poorgholami & Fatehi, 2014).

Cognitive strategies that are employed in this intervention could be helpful in learning, organising, and storing knowledge and skills. These strategies can facilitate utilisation and retrieval of information. The main components of the cognitive strategies include: positive attitude, motivation, time management, anxiety control, information processing, selecting a main idea, concentration, and self-testing. Thus, with regard to the main components, training these strategies may increase students' self-confidence, and effectively inhibit cognitive interference, mental preoccupations, and other distracting factors. All these processes may result in decreasing test anxiety (Tobias, 1985).

Cognitive restructuring has been effective in decreasing worry, which is the cognitive aspect of students' test anxiety, as this method can help students learn how to concentrate during task performance. This method also assists students to avoid overdue focus on self-centred responses. In this method, students become aware of anxiety-provoking thoughts, and learn to explain their emotions and problems. Moreover, they learn to ignore non-adaptive responses, although they might utilise methods to interpret and label emotional arousal (Sarason & Sarason, 1990).

Study skill training method is another effective strategy in decreasing test anxiety. In this regard, it should be noted that not only do the students need to focus on cognitive aspects and emotional reactions of a problem situation, but they should also be trained in adopting appropriate study methods (Sarason & Sarason, 1990). However, while study skills training can facilitate study strategy and test performance, it cannot decrease the test anxiety alone. Furthermore, relaxation and cognitive skills can decrease test anxiety, but they do not have effects on academic achievement. Therefore, the synthesis of these interventions can both decrease test anxiety and improve academic achievement (Sarason & Sarason, 1990). In other words, integrating behavioural, cognitive and educational programmes into a holistic intervention can address multiple aspects of test anxiety disorder and decrease symptoms across all of its dimensions.

As to the results of this study, even though the differences between the experimental and control groups were significant, no significant differences were observed between the two experimental groups (the group with perfectionist mothers, and the one with mothers who did not have this trait). In other words, the rate of test anxiety decrease is partially equal for both of the experimental groups. Thus, mothers' perfectionism played no moderating role in test anxiety. These results are partially inconsistent with the study conducted by Chik, Whittall & O'Neill (2008).

With regard to the moderating role of mothers' perfectionism, one could suggest some possibilities. First, rather than considering test anxiety as a trait, the present study considered it as an anxiety state. In a developmental history, mothers' perfectionism might create an anxiety trait in a child and affect anxiety in the form of a trait. However, in the present study, the intervention occurred in a school situation, with more emphasis placed on the anxious situation and anxiety state.

The second possible reading of this situation is that perfectionist mothers placed more emphasis on completion of the treatment as well as accomplishment of the task. Thus, in such a situation, the alleviation of test anxiety is predictable in these students. Third, the mothers' perfectionism is one of several factors influencing anxiety. More complex factors such as: task difficulty, level of student persistence, and students' other personality traits have been recognised to influence test anxiety. It should be noted that the effects of these factors were not controlled in this study.

Implications for treatment

Among the implications of this study is its pointing to future research directions in examining behavioural and cognitive interventions to decrease test anxiety. These findings can help expand theoretical perspectives related to study variables. They also have practical advantage for teachers and educational psychologists in decreasing students' test anxiety.

Limitations of the current study

The present study has some limitations. First, only mothers' perfectionism was studied in this research and it was not possible to control psychological and other characteristics that may have effects on students' test anxiety. As such, the generalisation of this research to other subjects may be limited. The other limitation of this research was its sample size (15 subjects for each group). What is suggested is to carry out similar research on samples with larger sizes to further assess the effectiveness of this method.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

- Abolghasemi. (2002). *Investigating the incidence of test anxiety and the effect of regular clinical desensitizing approaches to teaching immunity on reducing test anxiety of third-grade high school students in Ahvaz* (Unpublished PhD Dissertation). Shahid Chamran University of Ahvaz.
- Affrunti, N. W., Geronimi, E. M. C., & Woodruff- Borden, J. (2015). Language of perfectionistic parents predicting child anxiety diagnostic status. *Journal of Anxiety Disorders*, 30, 94–102.
- Arana, F. G., & Furlan, L. (2016). Groups of perfectionists, test anxiety, and pre-exam coping in Argentine students. *Personality and Individual Differences*, 90, 169–173.
- Asghari, A., Abdul Kadir, R., Elias, H., & Baba, M. (2012). Test anxiety and its related concepts: A brief review. *Education Science and Psychology*, 3, 3–8.
- Ashbaugh, A., Antony, M. M., Liss, A., Summerfeldt, L. J., McCabe, R. E., & Swinson, R. P. (2007). Changes in perfectionism following cognitive-behavioural treatment for social phobia. *Depression and Anxiety*, 24, 169–177.
- Baghaei, P., & Cassady, J. (2014). Validation of the Persian translation of the cognitive test anxiety scale. *Sage open*, 1–11. doi: 10.1177/2158244014555113.
- Besharat, M. A. (2002). Validity and reliability of negative and positive perfectionism. *Psychological Studies Magazine*, 8, 346–359.
- 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, 31–53.
- Cassady, J. C., & Holmes Finch, W. (2015). Using factor mixture modeling to identify dimensions of cognitive test anxiety. *Learning and Individual Differences*, 41, 14–20.
- Cheek, J. R., Badley, L. J., Reynolds, J., & Coy, D. (2002). An introduction for helping elementary student reduce test anxiety? Perspective from the field. Retrieved from <http://www.findarticles.com>
- Chik, H. M., Whittal, M. L., & O'Neill, M. L. (2008). Perfectionism and treatment outcome in obsessive-compulsive disorder. *Cognitive Therapy and Research*, 32, 676–688.
- Delavar, A. (2015). *The theoretical and practical fundamentals of research in the humanities and social sciences*. Tehran: Roshd Publications.
- 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, 57–71.
- Flett, L., Coulter, L. M., Hewitt, P. L., & Nepon, T. (2011). Perfectionism, rumination, worry, & depressive symptoms in early adolescents. *Journal of School Psychology*, 26, 159–176.
- Friedberg, R. (2009). *Cognitive therapy techniques for children and adolescents*. London, NY: The Guilford Press.
- Heiser, P., Simidian, G., Albert, D., Garruto, J., Catucci, D., Faustino, P., ... Cooper, L. (2015). Anxious for success: High anxiety in New York's schools. *Association of School Psychologists*, 1–8. Retrieved from <https://www.nyssba.org>

- Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social context: Conceptualization, assessment and association with psychopathology. *Personality and Social Psychology*, 60, 456–470.
- Kennedy, D. V., & Doepke, K. J. (1999). Multicomponent treatment of a test anxious college student. *Education and Treatment of Children*, 22, 203–217.
- Khalaila, R. (2015). The relationship between academic self- concept, intrinsic motivation, test anxiety, and achievement among nursing students: Mediating and moderating effects. *Nurse Education Today*, 35, 432–438.
- Lang, J., & Lang, J. (2010). Priming competence diminishes the link between cognitive test anxiety and test performance: Implications for the interpretation of test scores. *Psychological Science*, 21, 811–819.
- Liebert, R. M., & Morris, L. W. (1967). Cognitive and emotional components of test anxiety: A distinction and some initial data. *Psychological Reports*, 20, 975–978. doi:10.2466/pr0.1967.20.3.975
- Lozano, L. M., Valor- Segura, I., & Lozano, L. (2015). Could a perfectionism context produce unhappy children? *Personality and Individual Differences*, 80, 12–17.
- Mousavi, M., Hagshenas, H., & Alishahi, M. J. (2008). Effect of gender, school performance and school type on test anxiety among Iranian adolescents. *Iranian Red Crescent Medical Journal*, 10, 4–7.
- Nelson, J. M., Lindstorm, W., & Patricia, A. (2014). Test anxiety and college students with attention deficit hyperactivity disorder. *Journal of Psycho Educational Assessment*, 32(6), 548–557.
- Poorgholami, F., & Fatehi, Y. (2014). An investigation of the impact of the combination of systematic desensitization and study- skills training on the reduction of students' test anxiety. *Indian Journal of Fundamental and Applied Life Sciences ISSN*, 4, 2627–2633.
- Pourtaleb, N., & Mirnasab, M. (2017). The prediction of students' test anxiety based on their perfectionism dimensions. *Journal of Clinical Psychology & Personality*, 15(1), 73–81.
- Putwain, D. W. (2007). Test anxiety in UK schoolchildren: Prevalence and demographic patterns. *Journal of Educational Psychology*, 77, 579–593.
- Roohafza, H., Afshar, H., Sadegi, M., Soleymani, B., Saadaty, A., Asadollahi, G. H., & Matinpour, M. (2012). The relationship between perfectionism and academic achievement, depression and anxiety. *Journal of Iranian Psychiatry and Behavioural Sciences*, 4, 31–36.
- Samiei Sarkhanlou, S., Kiamanesh, A., & Ahadi, H. (2015). The relationships between perfectionism of mothers and emotional problems of their daughters. *Journal of Educational and Management Studies*, 5, 132–137.
- Sarason, I. G., & Sarason, B. R. (1990). *Test anxiety. Handbook of social and evaluation anxiety*. NY: Springer Science+Business Media.
- Soyso, C. K., & Weiss, A. (2014). Mediating perceived parenting styles- test anxiety relationships: Academic procrastination and maladaptive perfectionism. *Learning and Individual Differences*, 34, 77–85.
- Stoeber, J., Feast, A. R., & Hayward, J. A. (2009). Self-oriented perfectionism and socially prescribed perfectionism: Differential relationships with intrinsic and extrinsic motivation and test anxiety. *Personality and Individual Differences*, 47, 423–428.
- Stoeber, J., Hoyle, A., & Last, F. (2013). The consequences of perfectionism scale : Factorial structure and relationships with perfectionism, performance perfectionism, affect and depressive symptoms. *Measurement and Evaluation in Counseling and Development*, 46, 178–191.
- Tobias, S. (1985). *Overcoming math anxiety*. NY: Norton.
- Yeo, L. S., Goh, V. G., & Liem, G. A. (2016). School-based intervention for test anxiety. *Child Youth Care Forum*, 45, 1–17.
- Zargarzadeh, M., & Shirazi, M. (2014). The effect of progressive muscle relaxation method on test anxiety in nursing students. *Iranian Journal of Nursing and Midwifery Research*, 19, 607–612.
- Zeidner, M. (2004). Test anxiety. *Encyclopedia of Applied Psychology*, 3, 545–556.
- Zeidner, M., & Matthews, G. (2011). *Anxiety 101*. NY: Springer Publishing Company.