IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Exploring The Role Of Jpmr In Alleviating Test Anxiety Among College Students: A Study On Demographic Influences

Mohammad Ikbal BA [1] and J Venkatachalam [2]

[1]Mohammad Ikbal BA., Research scholar, Periyar University Salem.

[1]J. Venkatachalam, Professor, Department of Psychology, Periyar University, Salem 636011.

Abstract

This study aims to examine the efficacy of the Jacobson's Progressive Muscle Relaxation (JPMR) intervention in reducing test anxiety among college students and to explore the influence of demographic variables on the outcomes. Test anxiety was assessed using the Test Anxiety Scale developed by Senthil and Kadhivaran (2017). The research design included two groups: an experimental group that received the JPMR intervention and a control group. Paired Comparison Statistical techniques were used to analyze the data. The results indicated that the JPMR intervention significantly reduced test anxiety in the experimental group compared to the control group. Demographic variables, such as gender were found to influence anxiety levels, with female students reporting higher levels of test anxiety than males. These findings suggest that JPMR is an effective method for alleviating test anxiety, and demographic factors should be considered when designing interventions for anxiety management in academic settings.

Keywords: College Students, Experimental Group, JPMR, Test Anxiety

Introduction

Tests and examinations at all stages of education, especially at the higher education level have been considered an important and powerful tool for decision-making in our competitive society, with people of all ages being evaluated with respect to their achievement, skills and abilities. Zollar and Ben-chain (1990) have the opinion that "the era in which we live it test-conscious in which the lives of many people are not only greatly influenced, but are also determined by their test performance".

Test and examination stress is thought to prevent some individuals from reaching their academic potential. It has been found that students consistently perceive examination as a source of increase in anxiety and a situation engulfed with uncertainty/unfairness in letting them demonstrate their true achievements (Zollar & Ben-chain, 1990; Spielberger, 1985). Such feelings among students limit their potential performance during the test situation, resulting in higher text anxiety (Hill & Wigfield, 1984) directly causing a drop in the students' academic achievement. Test Anxiety has become the most upsetting and disruptive factor for students. There are a number of researches reporting text anxiety as one of the major causes or students' underachievement and low performances at different levels of their

[1]Mohammad Ikbal BA., Research scholar, Periyar University Salem… Email: miqbalsahla@gmail.com

[2]J. Venkatachalam, Professor, Department of Psychology, Periyar University, Salem 636011, Email: chalam66@yahoo.com

educational life (Oludipe, 2009) and has been shown to affect students' ability to profit from instruction (Schonwetler, 1995).

It is worth discussing some studies showing the statistically significant inverse relationship between test anxiety and students' achievement for a long time. Gaudry and Spielberger (1971) discussed that high test anxiety is considered as one of the main factors for the low performance of students at the university level. A study by Nicholson (2009) to explore the effects of test anxiety on grade 11 students' student achievement, revealed that anxiety and achievement are related to each other. Khalid and Hasan (2009) conducted a study on a purposively selected sample of 187 undergraduate students to explore the relationship between test anxiety and academic achievement and found that students with academic achievement have low test anxiety scores and vice versa. Chapell, Blanding, Takahashi, Silverstein, Newman, Gubi, and McCann (2005) conducted a research study to explore the relationship between test anxiety and academic performance. They collected data from a large sample of graduate and undergraduate students and found a significant and negative relationship between test anxiety and academic achievement.

Hancock (2001) investigated the effects of students' test anxiety and teacher's evaluation practices on students' achievement and motivation at the post the secondary level. He found statistically significant results which revealed that all students, especially students with high anxiety levels, performed poorly and were less motivated to learn. Thus he concluded that when students who are particularly test-anxious are exposed to a highly evaluative assessment environment in their educational institution, they perform poorly and are less motivated to perform (Hancock, 2001). Albero, Brown, Eliason & Wind (1997), on the basis of their research study, concluded that students having high test anxiety had significantly lower scores. Oludipe (2009) conducted a study to explore how test anxiety affects students' performance levels in the sciences, especially in Physics, and concluded that "low test anxious students performed better than high test-anxious students on both numerical and non-numerical tasks in Physics". On the other hand, Schonwetter, (1995) relating this phenomenon to classroom instruction, the researchers further discussed "how high test-anxious students were unable to benefit directly from organized instruction, which ultimately affected their performance in class".

Several researchers explored gender differences with respect to test anxiety and found that females have higher levels of overall test anxiety than males (Chapell et al., 2005; Cassady & Johnson, 2002; Bandalos et al., 1995); Mwamwenda, 1994). Cassady & Johnson, (2002) explained that "one explanation for differences in test anxiety on the basis of students' gender is that males and females feel same levels of test worry, but females have higher levels of emotionality". Zeidner (1990), on the basis of his research, concluded that the difference in test anxiety scores of males and females is due to gender differences in scholastic ability.

Jacobson's Progressive Muscle Relaxation (JPMR) has been found to be effective in reducing stress and anxiety in students, with one study demonstrating a significant reduction in perceived stress and test anxiety scores in exam-going MBBS students after one month of JPMR practice (Palkar et al., 2021). This suggests that JPMR may be a useful technique for students to manage stress and anxiety related to exams.

Progressive muscle relaxation therapy has been shown to be effective in reducing stress among healthcare professionals, with one study finding a significant reduction in stress levels among staff nurses after JPMR practice (Patel, 2014). This highlights the potential benefits of JPMR as a stress-reduction technique for individuals in high-pressure professions.

It is quite evident from the arguments given above and the results of the studies reported that text anxiety affects achievement along with other variables such as motivation to learn, ability to benefit from formal instruction and gender. This diversification of effects of text anxiety leads researchers to think of text anxiety as at least a bi-dimensional construct (Berk & Nanda, 2006; Chapell et al., 2005; Cassady & Johnson, 2002; Diaz, 2001) with affective and cognitive components. The affective dimension (emotionality) refers to behavioural or physical reactions to testing situations, such as fear, nervousness, and physical discomfort (Hancock2001; Pintrich & Schunk, 1996; Williams, 1994). This high level of emotionality is evident through physiological responses experienced during evaluative situations (Cassady & Johnson, 2002). The cognitive dimension (worry) refers to cognitive concerns about performance, such as worry about the testing situation or negative performance expectations (Humbree,

1988; Morris, Davis, & Hutchings, 1981; Depreeuw, 1984) .It is the cognitive aspect of test anxiety which has significantly accounted for declines in the academic achievement of adolescents and post secondary student Bandsdlos, Yates, & Thorndike-Christ, 1995; Williams, 1991; Hembree, 1981).

Methods:

Objectives:

1. To investigate the efficacy of the JPMR Intervention on test anxiety
2. To examine the influence of demographical variables such as gender, on test anxiety.

Hypotheses:

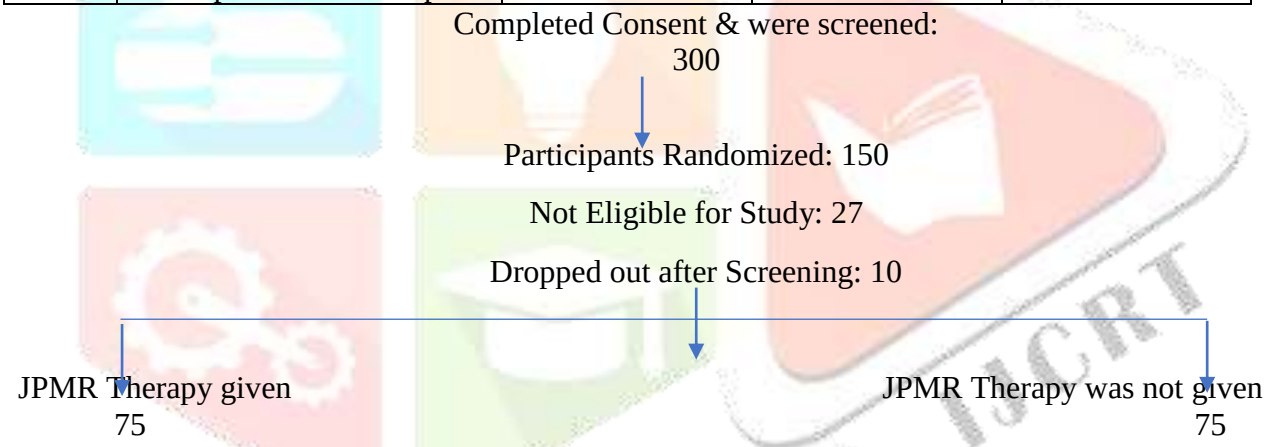
Ha_1: The JPMR relaxation therapy is effective in reducing test anxiety.

Ha_2: The effectiveness of JPMR relaxation therapy differs based on gender.

Research Design:

In the present research while developing the research design the JPMR therapy is taken as an intervention for Test Anxiety. Test Anxiety is taken as independent variables and demographic variables as dependent variables. We divide the group into two conditions: Controlled and Experimental Group.

Sl.No	Conditions	N	Mean Age	Total
1	Controlled Group	75	20	150
2	Experimental Group	75		



Sample

The study's sample included 150 college students (80 males and 70 females), aged 18 to 23, who were selected from Shimoga District, Karnataka, using a simple random sampling method.

Measures

1. Text Anxiety

The Text anxiety scale developed by Senthil and Kadhiravan (2017) is used to assess the test anxiety of college students. It was administered as a self-report assessment scale which has four response anchors viz. (i) Not at all true, (ii) Slightly true, (iii) Moderately true, and (iv) Extremely true. These options have assigned scores from 1 to 4, i.e., a score of '4' indicates the highest score whereas '1' indicates the lowest score. This scale has six distinct factors - Cognitive Distractions (19, 22, 25, 28, 31, 34), Bodily Reactions (20, 23, 26, 29, 32, 35), Behavioural Distortions (21, 24, 27, 30, 33, 36), Social Obligation (1, 2, 3, 4, 5, 6), Exam Preparedness (8, 10, 12, 13, 15, 17) and Avoidance (7, 11, 14, 16, 18). Researchers have reported high reliability and validity of the scale. The measure showed good internal consistency (Cronbach's alpha of 0.832) and test-retest reliability (r = 0.649), thus, good internal consistency. The three facets of test anxiety during evaluative situations namely, cognitive distractions, bodily reactions, and behavioural distortions significantly correlate with tension, worry, test irrelevant

thinking, bodily symptoms, anxiety, and lack of self-regulation but inversely correlate with intrinsic value.

JPMR

In the modern world, where stress and anxiety have become ubiquitous across all age groups and professions, the demand for effective relaxation techniques has never been more pressing. Among the various methods available, Jacobson's Progressive Muscle Relaxation (JPMR) stands out as a simple yet powerful technique that has stood the test of time. Developed in the early 20th century by American physician Edmund Jacobson, JPMR is a structured method of deep muscle relaxation that aims to reduce both physical tension and psychological stress.

Origin and Theoretical Foundations

JPMR was developed by Edmund Jacobson in the 1920s, based on the principle that mental calmness is a natural result of physical relaxation. Jacobson observed that anxiety and stress often manifest physically as muscle tension. Therefore, by learning to recognize and control this muscular tension, individuals can effectively manage their stress levels. Jacobson believed that there is a strong connection between the mind and body and that by reducing bodily tension, one could also reduce mental agitation.

His technique was grounded in psycho physiology, the study of how psychological processes influence bodily functions. Jacobson's core idea was that voluntarily relaxing specific muscle groups, one at a time, could interrupt the cycle of anxiety and restore a state of calmness and balance. Over the years, JPMR has been refined and adapted for clinical, therapeutic, and educational use, and it continues to be one of the most researched and widely practiced relaxation techniques in psychology and medicine.

Interventions for Test Anxiety

Test anxiety is a common phenomenon experienced by students across various educational levels. It refers to the feeling of apprehension, nervousness, or fear that arises before or during an examination. Test anxiety can hinder academic performance, impede learning, and negatively impact overall well-being. However, with the right interventions and strategies, individuals can effectively manage and overcome test anxiety.

Data Collection:

The researcher of the present study had obtained permission and conducted personal visits to different departments of the College with the permission of the College's authority. The researcher asks the students they fill up the Test anxiety. Questionnaire.

In the total sample of 300, different types of students filled up and the researcher collected a sample which was incomplete and wrongful questionnaires, it is rejected finally 250 questionnaires were selected for the research. Of these 250 samples taken 150 students for intervention those who scored high scores in Test Anxiety.

Stat analysis:

Paired Comparison Method is a handy tool for decision-making; it describes values and compares them to each other.. This statistical technique was used to know the effectiveness of JPMR interventions on Test Anxiety.

Results & Discussion:

Table No.1. Mean and Standard Deviation for Test Anxiety Scores of Overall College Students (Pre- and Post-Treatment Scores)

Text Anxiety		N	Mean	MD	t Value
Cognitive Distractions	Pre	150	17.44	2.2	11.32***
	Post	150	15.24		
Bodily reactions	Pre	150	12.39	2.38	16.25***
	Post	150	10.01		
Behavioural Distortions	Pre	150	15.89	3.09	16.07***
	Post	150	12.80		
Social Obligations	Pre	150	14.92	4.27	24.15***
	Post	150	10.65		
Exam Preparations	Pre	150	17.04	1.36	8.33***
	Post	150	15.68		
Avoidance	Pre	150	18.5	2.55	9.85***
	Post	150	15.95		

Table 1 reveals that there is a significant difference in the pre-intervention and post-intervention scores of Test Anxiety among college students. The dimension of the Test Anxiety i.e.,Cognitive Distractions the Pre-test Mean scores on Cognitive Distractions decreased from 17.44 to a post-test mean score of 15.24 with a Mean Difference of 2.2, which was found to be very highly significant ($t= 11.32$, $p<0.001$).

The dimension of the Test Anxiety i.e., Bodily reactions the Pre-test Mean scores on Bodily reactions decreased from 12.39 to a post-test mean score of 10.01 with a Mean Difference of 2.38, which was found to be very highly significant ($t= 16.25$, $p<0.001$).

The dimension of the Test Anxiety i.e., Behavioral Distortions the Pre-test Mean scores on Behavioral Distortions decreased from 15.89 to a post-test mean score of 12.80 with a Mean Difference of 3.09, which was found to be very highly significant ($t= 16.07$, $p<0.001$).

The dimension of the Test Anxiety i.e., Social Obligations the Pre-test Mean scores on Social Obligations decreased from 14.92 to a post-test mean score of 10.65 with a Mean Difference of 4.27, which was found to be very highly significant ($t= 24.15$, $p<0.001$).

The dimension of the Test Anxiety i.e., Exam Preparations the Pre-test Mean scores on Exam Preparations decreased from 17.04 to a post-test mean score of 15.68 with a Mean Difference of 1.36, which was found to be very highly significant ($t= 8.33$, $p<0.001$).

The dimension of the Test Anxiety i.e., Avoidance the Pre-test Mean scores on Avoidance decreased from 18.5 to a post-test mean score of 15.95 with a Mean Difference of 2.55, which was found to be very highly significant ($t= 9.85$, $p<0.001$).

The above results indicate that exposure to the interventions helped to decrease Test Anxiety among College Students.

Table No.2. Mean and Standard Deviation for Test Anxiety Scores of Male College Students (Pre- and Post-Treatment Scores)

Text Anxiety		N	Mean	MD	t Value
Cognitive Distractions	Pre- Male	80	17.30	2.53	9.54***
	Post - Male	80	14.77		
Bodily reactions	Pre- Male	80	12.60	2.57	11.15***
	Post - Male	80	10.03		
Behavioural Distortions	Pre- Male	80	15.90	3.04	12.3***
	Post - Male	80	12.86		
Social Obligations	Pre- Male	80	15.27	4.11	16.22***
	Post - Male	80	11.16		
Exam Preparations	Pre- Male	80	16.91	1.39	6.46***
	Post - Male	80	15.52		
Avoidance	Pre- Male	80	18.15	2.53	7.3***
	Post - Male	80	15.62		

Table 2 reveals that there is a significant difference in the pre-intervention and post-intervention scores of Test Anxiety among Male college students. In the dimension of the Test Anxiety i.e.,Cognitive Distractions the Male Student's Pre-test Mean scores decreased from 17.30 to a post-test mean score of 14.77 with a Mean Difference of 2.53, which was found to be very highly significant (t= 9.54, p<0.001).

In the dimension of the Test Anxiety i.e., Bodily reactions the Male Student's Pre-test Mean scores decreased from 12.60 to a post-test mean score of 10.03 with a Mean Difference of 2.57, which was found to be very highly significant (t= 11.15, p<0.001).

In the dimension of the Test Anxiety i.e., Behavioural Distortions the Male Student's Pre-test Mean scores decreased from 15.90 to a post-test mean score of 12.86 with a Mean Difference of 3.04, which was found to be very highly significant (t= 12.3, p<0.001).

In the dimension of the Test Anxiety i.e., Social Obligations the Male Student's Pre-test Mean scores decreased from 15.27 to a post-test mean score of 11.16 with a Mean Difference of 4.11, which was found to be very highly significant (t= 16.22, p<0.001).

In the dimension of Test Anxiety i.e., Exam Preparations the Male Student's Pre-test Mean scores decreased from 16.91 to a post-test mean score of 15.52 with a Mean Difference of 1.39, which was found to be very highly significant (t= 6.46, p<0.001).

In the dimension of the Test Anxiety i.e., Avoidance the Male Student's Pre-test Mean scores decreased from 18.15 to a post-test mean score of 15.62 with a Mean Difference of 2.53, which was found to be very highly significant (t= 7.3, p<0.001)

Table No.3. Mean and Standard Deviation for Test Anxiety Scores of Female College Students **(Pre- and Post-Treatment Scores)**

Text Anxiety		N	Mean	MD	t Value
Cognitive Distractions	Pre- Female	70	17.61	1.84	6.49***
	Post - Female	70	15.77		
Bodily reactions	Pre- Female	70	12.15	2.17	12.75***
	Post - Female	70	9.98		
Behavioural Distortions	Pre- Female	70	15.88	3.14	10.43***
	Post - Female	70	12.74		
Social Obligations	Pre- Female	70	14.52	4.45	18.21***
	Post - Female	70	10.07		
Exam Preparations	Pre- Female	70	17.20	1.33	5.30***
	Post - Female	70	15.87		
Avoidance	Pre- Female	70	19.08	2.76	6.61***
	Post - Female	70	16.32		

Table 3 reveals that there is a significant difference in the pre-intervention and post-intervention scores of Test Anxiety among Female college students.

In the dimension of the Test Anxiety i.e., Cognitive Distractions the Female Student's Pre-test Mean scores decreased from 17.61 to a post-test mean score of 15.77 with a Mean Difference of 1.84, which was found to be very highly significant (t= 6.49, p<0.001).

In the dimension of the Test Anxiety i.e.,Bodily reactions the Female Students' Pre-test Mean scores decreased from 12.15 to a post-test mean score of 9.98 with a Mean Difference of 2.17, which was found to be very highly significant (t= 12.75, p<0.001).

In the dimension of the Test Anxiety i.e.,Behavioral Distortions the Female Students' Pre-test Mean scores decreased from 15.88 to a post-test mean score of 12.74 with a Mean Difference of 3.14, which was found to be very highly significant (t= 10.43, p<0.001).

In the dimension of the Test Anxiety i.e.,Social Obligations the Female Student's Pre-test Mean scores decreased from 14.52 to a post-test mean score of 10.07 with a Mean Difference of 4.45, which was found to be very highly significant (t= 18.21, p<0.001).

In the dimension of Test Anxiety i.e.,Exam Preparations the Female Students' Pre-test Mean scores decreased from 17.20 to a post-test mean score of 15.87 with a Mean Difference of 1.33, which was found to be very highly significant (t= 5.30, p<0.001).

In the dimension of Test Anxiety i.e.,Avoidance the Female Students' Pre-test Mean scores decreased from 19.08 to a post-test mean score of 16.32 with a Mean Difference of 2.76, which was found to be very highly significant (t= 6.61, p<0.001).

Conclusion:

From the findings of this study, it can be concluded that JPMR has significant impact on test anxiety, and gender differences are also shown in this findings. This results indicate that exposure to the interventions helped to decrease Test Anxiety among College Students.

References:

1. Aeshwarya Raj and Jyoti Shankar Tripathi (2024)"Integrating Jacobson Relaxation Technique into Indian Societal Frameworks for Holistic Stress Reduction," International Journal of Interdisciplinary Approaches in Psychology, Vol. 2, Issue 4.
2. Bandalos, D.L., Yates, K., & Thorndike-Christ, T. (1995). Effect of math self-concept, perceived self-efficacy, and attribution for failure and success on test anxiety. Journal of Educational Psychology, 11, 351- 360.
3. Berk, R.A. & Nanda, J. (2006). A randomized trial of humor effects on test anxiety and test performance. Humor: International Journal of Human Research, 19 (4), 425-454.
4. Berk, R.A. (2000). Does humor in course tests reduce anxiety and improve performance? College Teaching, 48 (4), 151-58.
5. Birenbaum, M., & Nasser, F. (1994). On the relationship between test anxiety and test performance. Measurement and Evaluation in Counselling and Development, 27(1), 293-301.
6. Chapell, M.S., Blanding, Z.B., Takahashi, M., Silverstein, M.E., Newman, B., Gubi, A., & Mccann, N. (2005). Test anxiety and academic performance in undergraduate and graduate students. Journal of Educational Psychology, 97 (2), 268-274.
7. Depreeuw, E. A. M. (1984). A profile of test anxious student. Applied Psychology, 33(2), 221-232. Erbe, B. (2007). Reducing test anxiety while increasing learning. College Teaching, 55 (3), 96-97.
8. Foster, S. K., Paulk, A., & Dastoor, B. R. (1999). Can we really teach test taking skills? New Horizons in Adult Education, 13 (1), 4-12.
9. Gaudry, E., & Spielberger, C. D. (1971). Anxiety and educational achievement. New York: Wiley.
10. Hancock, D. R. (2001). Effect of test anxiety and evaluative threats on students' achievement and motivation. The Journal of Educational Research, 94 (5), 284-290.
11. Haris, H. L., & Coy, D. R. (2003). Helping students cope with test anxiety. ERIC Digest. (ERIC Document Reproduction Service No. ED 479355). Retrieved June 25, 20008 from a World Wide Web: http://www.ericdigest.org/2005-2/anxity.html
12. Hill, K.T., & Wigfield, A. (1984). Test anxiety: A major educational problem and what can be done about it. Elementary School Journal, 85, 105-126.
13. Humbree, R. (1988). Correlates, causes, effects, and treatment of test anxiety. Review of Educational Research, 58 (1), 47-77.
14. Khalid, R., & Hasan, S. S. (2009). Test anxiety in high and low achievers. Pakistan Journal of Psychological Research, 24(3-4).
15. Kondo, D. S. (1996). Strategies for coping with test anxiety. Anxiety, Stress and Coping, 10, 203-215.
16. Morris, L. W., Davis, M. A., & Hutchings, C. J. (1981). Cognitive and emotional components of anxiety: Literature review and a revised worry-emotionality scale. Journal of Educational Psychology, 73, 541- 555.
17. Nair, P. P., & Meera, D. K. (2014). Effectiveness of progressive muscle relaxation in reducing academic stress of secondary school students. IOSR Journal of Humanities and Social Science, 19(8), 29-32.
18. Nicholson, A. M. (2009). Effects of test anxiety on student achievement (ACT) for college bound students. Dissertation Abstract International. DAI-A-70/07, AAT 3366126
19. Oludipe, B. (2009). Influence of test anxiety on performance levels on numerical tasks of secondary school physics students: Academic Leadership: Online Journal, 7 (4)

20. Palkar, D., Panigrahi, S., Shatadal, P., & Mehta, R. (2021). Impact of Jacobson's Progressive Muscle Relaxation on Stress Levels of Exam Going MBBS Students of a Medical College in South Gujarat, India. Journal of Clinical and Diagnostic Research, 15(8), VC10-VC13.
21. Senthil Kumaran, J, Kadhiravan, S (2017) Unpublished PhD thesis "Test anxiety among school students in relation to their procrastination and academic self concept" http://hdl.handle.net/10603/307854
22. Serok, S. (1991). The application of Gestalt methods for the reduction of test anxiety in students. Assessment and Evaluation in Higher Education, 16 (2), 157-64.
23. Spielberger, C. D. (1985). Assessment of state and trait anxiety: Conceptual and methodological issues. Southern Psychologist, 2(4), 6–16.
24. Stober, J. (2004). Dimensions of test anxiety: Relations to ways of coping with pre-exam anxiety and uncertainty. Anxiety, Stress and Coping, 17 (3), 213-226.
25. Williams, J.E. (1994). Anxiety measurement: Construct validity and test performance. Measurement & Evaluation in Counseling & Development, 27 (1),
26. Zeidner, M. (1990). Does test anxiety bias scholastic aptitude test performance by gender and socio-cultural group? Journal of Personality Assessment, 55, 145-160.
27. Zoller, U., & Ben-Chain, D. (1990). Gender differences in examination type, test anxiety, and academic achievement in college science: a case study. Science education, 74(6), 597-608.