

GENDER DIFFERENCES IN TEST ANXIETY AND EXAMINATION STRESS

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ABSTRACT

Objective: To assess and compare the level of test anxiety and examination stress among males and females university students.

Design: Cross sectional study.

Place and Duration of study: The study was conducted in the Department of Sociology and Business Administration, University of The Punjab, New campus, Lahore from June to August 2005.

Subjects and Methods: 100 students of sociology and business administration (50 male, 50 female) were approached 3 to 7 days before their final exams through purposive convenient sampling technique.

Results: Female students experience significantly higher level of test anxiety, $t(98) = 3.83, p < 0.05$, Worry, $t(98) = 2.458, p < 0.05$, Emotionality, $t(98) = 4.47, p < 0.05$ and Examination stress, $t(98) = 2.01, p < 0.05$ as compared to male students. In addition, female students reported a significantly higher level of need for family support as compared to male students, $t(98) = -3.623, p < 0.05$.

Conclusion: Female Masters' students are needed to pay more attention on controlling their level of test anxiety, worry, emotionality and examination stress than male students, which could be done through training them. Bearing in mind the gender differences in test anxiety and examination stress different kinds of counseling strategies must be used for males and females.

Key words: Gender differences, Test Anxiety, Worry, Emotionality, Examination stress.

INTRODUCTION

Students are susceptible to immense anxiety and stress during examinations, which can affect health and performance. Test Anxiety is a pertinent issue gaining more importance with the increase in competition especially at the higher level of education¹. Although test anxiety calls for immediate attention to the mental health and welfare of students yet it seems to be overlooked in the Eastern society. The result of the exams is perceived to be threatening and this fear is transformed into test anxiety and stress that can have serious implications in terms of performance and health of the students. Gender seems to be the integral factor in test anxiety and stress because according to the State-trait theory worry and emotionality determine the type of test anxiety². In other

words, thinking styles could affect the way one perceives and reacts to people and situations and these cognitions could vary across the genders³⁻⁷.

In a study female students were more stressed than the male students⁷. Similarly, observed a higher level of trait test anxiety and statistics course anxiety in female students as compared to the male students⁴. Female students showed higher levels of test anxiety than male students despite the fact that they managed time better than male students⁸. Girls have been shown to react more intensively towards stressors⁹. Likewise, female students reported high concerns about test anxiety to the student counseling services at the Alberta University¹⁰. In addition, female students were also concerned with other psychological problems such as eating disorder and emotional instability. Girls performed better than boys but even then their anxiety increased especially as they became older⁵.

Female university students at Maritime University were found to perceive three out of five scenarios more stressful than male students and were also inclined to seek more emotional support as compared to men³. Increased test anxiety amongst the female students can be the result of stereotype expectations¹¹. Grades can trigger anxiety specifically when students associate their academic performance with their self esteem. Such an anxiety can be responsible for the underperformance of female students¹².

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A research is designed to explore gender differences amongst Masters students in Pakistan so that we can see whether the results from our local settings are consistent with the results from western cultures or there are any differences.

In the present study, it is hypothesized that there are significant gender differences in test anxiety, worry component of test anxiety, emotionality component of test anxiety and examination stress. The aim of this research was to examine test anxiety and to identify the factors that might trigger a certain type of anxiety prior to exams. Knowing the gender differences in test anxiety and examination stress could help in introducing anxiety management strategies and preventive measures which might be useful in minimizing or preventing their potential harmful psychological and physiological effects on health and performance. This research might provide considerable insight into the role of gender in test anxiety and examination stress within a certain cultural context.

SUBJECTS AND METHODS

Sample

The Purposive convenient sampling technique was used. The sample consisted of 50 female and 50 male Masters students within the age range of 20-28 years, 3-7 days prior to the final examination and who were willing to participate in this examination from the department of Sociology and Business Administration, University of The Punjab, New campus, Lahore.

Instruments

The demographic Variables Questionnaire constructed by the researcher was used to collect information about the participants' demographics, possible reasons for test anxiety, number and type of stress events as well as pretest symptoms that could affect test anxiety.

Test anxiety was measured through The Test Anxiety Inventory¹³. It consists of 20 items which measures test Anxiety through two subscales of worry and emotionality. Therefore the scores on these subscales ranged from 8 to 32 whereas the total scores varied between 20 and 80. The worry subscale (Item No. 3, 4, 5, 6, 7, 14 & 17) measures the cognitive behavior while the emotionality subscale (Item No. 2, 8, 9, 10, 11, 15, 16 & 18) indicates the bodily changes occurring due to anxiety.

The level of examination stress is evaluated with the Stress Inventory (Adapted from the Stress Identifier Table developed by the Examination Department of Institute of Cost and Management Accountants of Pakistan, 2002) which consisted of 15 items¹⁴.

Procedure

Instruments were used in a pilot study on six volunteer Masters' students. Official permission from the concerned authorities as well as consent from the par-

ticipants was obtained. Verbal and written instructions on the questionnaires were given to the participants. Instruments were administered to each participant individually in his/her respective department 1 week before the final exams. Queries regarding certain terms in the three questionnaires were answered in order to receive accurate responses to the items as far as possible. The results were entered to SPSS software program version 12 (SPSS Inc., Chicago IL) for the analysis of the data¹⁵.

RESULTS

The demographic characteristics of the sample (100 Masters Students) according to the gender are given in Table 1.

Table 1

Descriptive Characteristics of the Sample by Gender

Characteristics	Male		Female	
	Freq	Percent	Freq	Percent
Department				
Sociology	25	50	40	80
IBA	25	50	10	20
Student Status				
Day scholar	29	58	35	70
Hosteller	21	42	15	30
Semester				
One	14	28	19	38
Three	36	72	31	62
Batch				
Regular	33	66	16	32
Replica	17	34	34	68
Mean Age in years		22.61		21.72

Freq=Frequency, Percent=Percentage, IBA=Institute of Business Administration.

Female students experience significantly higher level of test anxiety, $t(98) = 3.83, p < 0.05$, Worry, $t(98) = 2.458, p < 0.05$, Emotionality, $t(98) = 4.47, p < 0.05$ and Examination stress, $t(98) = 2.01, p < 0.05$ as compared to male students as shown in Table 2.

Apart from these gender differences, astonishingly t test revealed significant gender differences on item number 13 of Stress Inventory which measured the need for personal support from family. Table 3 shows $t(98) = -3.623, p < 0.05$ a significantly greater need for social support from family in female students as compared to male students (Table 3).

Table 2
Mean, Standard Deviation and Standard Error of Difference

Variable		M	SD	t	df	SE _{d_{x-x}}	p
Test Anxiety	Female (n = 50)	48.72	11.3929				
by Gender	Male (n = 50)	40.54	9.88755	3.83*	98	2.13336	0
Worry	Female (n = 50)	17.68	4.744				
by Gender	Male (n = 50)	15.44	4.361	2.458*	98	0.91142	0.016
Emotionality	Female (n = 50)	21.16	5.63285				
by Gender	Male (n = 50)	16.4	4.9775	4.47*	98	1.06306	0
Examination Stress by Gender	Female (n = 50)	26.9	3.95511				
	Male (n = 50)	25.22	4.37661	2.01*	98	0.83424	0.04
Examination Stress (Item No. 13) by Gender	Female (n = 50)	2.5	0.6776				
	Male (n = 50)	1.96	0.8071	-3.623*	98	0.14904	0

SE_{d_{x-x}} = Standard error of difference between the means of male and female subjects. Item numbers 1-20 of Test Anxiety Inventory measure test anxiety. Item numbers 3, 4, 5, 6, 7, 14, 17, & 20 of Test Anxiety Inventory measure worry. Item numbers 2, 8, 9, 10, 11, 15, 16 & 18 measure emotionality. Item numbers 1-15 of Stress Inventory measure Examination stress.

Item number 13 measures need for personal support from family of Stress Inventory.

In addition to gender differences in test anxiety and examination stress certain gender differences in reported symptoms of test anxiety were also noted. The most frequently reported symptom of test anxiety by both female (44%) and male (34%) students was “feelings of being hurt” (Table 4).

The most frequently reported etiology of test anxiety was “self expectations” which was reported by 50% of the male students and 38% of the female students (Table 5).

Factor Analysis (Table 6) was also performed on the scores obtained from Test Anxiety Inventory and Stress Inventory for male and female students without separating their data. Emotionality and Worry were the two major factors with factor loadings above .550 in Test Anxiety Inventory whereas Stress Associated Performance, Personal support, state of stagnation or fatigue and physiological disturbance were the four factors with loadings above .550 in Stress Inventory¹³.

DISCUSSION

The findings of this research suggest that gender differences are significant where female Masters’ students showed a significantly higher level of test anxiety than their male counterparts. Therefore, the hypotheses that there are gender differences in test anxiety, worry, emotionality and examination stress have been supported. Other researches also support this finding^{3-5,7,8,10,16-21}. A higher level of test anxiety amongst the female students is also supported by other studies²². Along with the overall level of examination stress, it was

found that female students had a significantly higher need for personal support from the family as compared to the male students. The symptoms of test anxiety and stress events which were measured seven days before the exam also differed amongst the two genders.

Female students appear to be more prone to test anxiety and examination stress, possibly due to the Eastern culture which encourages them to be more expressive. Other than the assignment of different social roles to men and women which might be responsible for increased emotional susceptibility in women; these gender differences might be the outcome of suppressed feelings of aggression in women as Adler’s theory of anxiety seems to suggest²³. Women seem to be more inclined to experience test anxiety and stress when they are determined to prove their worth in academics especially when the society discourages their right to higher education and makes them feel intellectually inferior to men. This is in accordance with Freud’s theory of anxiety in which the second type of anxiety is produced as a result of threat to the ego²⁴. Existentialists also emphasize the concept of threat to self esteem which might cause test anxiety amongst female students²⁵. It might be argued that female students are likely to associate their self-worth with grades in exams while male students seem unlikely to care about exams so much. Prior researches supporting this observation also show that male students have confidence in their capability to perform well in exams^{5,11}. It might also be suggested that female students in an attempt to fulfill their desires to excel become test anxious just as Freud conceptualizes this phenomenon^{26,27}.

Table 3***Gender Differences in Reported Symptoms of Test Anxiety**

Symptoms	Female (n=50)		Male (n=50)	
	Freq	Percent	Freq	Percent
Outburst of Anger	10	20%	7	14%
Overwhelming anxiety	3	6%	9	18%
Feelings of being hurt	22	44%	17	34%
Frequent crying spells	4	8%	1	2%
Headaches	21	42%	15	30%
Digestive problems	3	6%	9	18%
Aching neck or back	4	12%	7	14%
Breathing problems	5	10%	1	2%
Heart palpitations	1	2%	1	2%
Teeth grinding	1	2%	4	8%
Muscle spasms	6	12%	2	4%
Worsening of skin conditions	5	10%	4	8%

* Measured 7 days before the exam and experienced during past one month, Freq=Frequency, Percent=Percentage, N=Number of students.

Table 4***Gender Differences in the Reported Etiology of Test Anxiety**

Etiology	Female (n=50)		Male (n=50)	
	Freq	Percent	Freq	Percent
Parents' expectations	5	10%	4	8%
Teachers' pressure	2	4%	0	0%
Peers' expectations	1	2%	4	8%
Self expectations	19	38%	25	50%
Stress Provoking exam environment	8	16%	3	6%
Poor study habits	16	32%	16	32%
Home sickness	3	6%	4	8%

* Measured 7 days before the exam and experienced during the past one month, Freq=Frequency, Percent=Percentage, N=Number of students.

Table 5***Factor Analysis for 20 Items of Test Anxiety Inventory (Two Factors Extracted)**

Items	Emotionality	Worry
Item1		
Item2	0.688	
Item3		
Item4		
Item5		0.614
Item6		0.728
Item7		0.622
Item8	0.593	
Item9		
Item10	0.588	
Item11	0.661	
Item12		
Item13		
Item14		
Item15	0.627	
Item16	0.609	
Item17		0.589
Item18	0.739	
Item19		
Item20	0.558	

Normal Varimax Solution

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'Feelings of being hurt' was the most frequently reported symptom of test anxiety with a greater percentage of female Masters students as compared to male Masters students reflecting proneness to emotionality of Pakistanis in general as well as higher incidence of emotionality amongst female students. Overall, the reported symptoms of test anxiety seem to indicate higher level of emotionality in female students and higher level of examination stress amongst male students in reported stress events.

Female students attributed their test anxiety to stress provoking exam environment, parents, teachers, self expectations and poor study habits whereas male students seemed to be aroused more by self expectations, poor study habits and peers' expectations. However, male students seemed to be undisturbed by the teachers' pressure. This shows that women have a greater tendency to seek social approval than men.

Even though parents' expectations, teacher's pressure and stress provoking exam environment seemed to be the contributing factors yet it cannot be assumed that environment is the sole driver of test anxiety in female students rather both male and female Masters students

Table 6***Factor Analysis for 15 Items of Stress Inventory**

Items	Stress Associated performance	Personal Support	State of Stagnation or Fatigue	Physiological Disturbance
Item 1				
Item 2				0.711
Item 3				0.605
Item 4				
Item 5			0.613	
Item 6				
Item 7			0.727	
Item 8	0.766			
Item 9			0.56	
Item 10				
Item 11	0.701			
Item 12		0.822		
Item 13		0.639		
Item 14				
Item 15		0.659		

Normal Varimax Solution

*Adapted from Stress Identifier Table developed by Examination Department, Institute of Cost & Management Accountants of Pakistan, 2002

reported poor study habits (32%) and self-expectations (50% in male students and 38% in female students) as the two major causes of test anxiety.²⁸ Spielberger, Gonzalez, and Fletcher (1979) also report poor study habits as a characteristic of test anxious students. Emotionality and worry were the two major factors extracted in factor analysis of the combined data of female and male students with the exception of item number 20 which has been identified as a new item in the emotionality subscale. Item number 20 indicates nervousness leading to impaired cognition. According to the western norms this item was observed in the worry subscale whereas in Pakistan this appeared in the emotionality subscale. However, item numbers 3, 4, 14 and 20 were not included in the worry subscale and item number 9 in the emotionality subscale of the Test Anxiety Inventory in the two factor extraction of the Pakistani data².

CONCLUSION

Since female masters' students reported higher levels of test anxiety, worry, emotionality and examination stress than male students, hence they need to control their level of emotionality and develop confidence with respect to test anxiety and worry. On the other hand female masters' students also need to get rid of excessive examination stress which could be reduced through training them.

Bearing in mind the gender differences in test anxiety and examination stress different kinds of counseling

strategies must be used for female and male Masters' students to deal with anxiety and stress with respect to examinations. Culture-specific educational awareness campaigns could help in shaping the differential attitude of the society towards the higher education of eastern women.

LIMITATIONS

This research was based on purposive sampling and a small sample with respect to the diversity of students, the sample characteristics varied with respect to subject, session, semester (I/III), batch (morning/replica) and student status (day scholar/hosteller); therefore it has limited external validity.

IMPLICATIONS

This study provides a further direction for research to find out the reasons for test anxiety and examination stress. This research may also bring out the necessity to explore the reasons for greater test anxiety due to stress provoking exam environment and other social factors amid female students as compared to male students.

These research findings can assist in developing ways to minimize test anxiety and examination stress. Factors such as poor study habits and high self expectations also need to be examined in order to find if they are contributing to test anxiety and what can be done to remedy them.

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