

ORIGINAL ARTICLE

EFFECT OF TEST ANXIETY ON ACADEMIC ACHIEVEMENT OF UNIVERSITY STUDENTS

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Background: Anxiety negatively affects the physical and mental health of the individual and ultimately personal, social, occupational and educational performance is badly affected. This study was carried out to investigate the effect of test anxiety on academic achievement of university students and explore the gender differences in effect of test anxiety on academic achievement of university students.

Methods: Cross-sectional research design was used to conduct this study. The data was collected from District Haripur, from March to May 2017. A sample of 360 students was randomly selected from semester 4 to 8 of BS classes by stratified random sampling technique in order to have equal representation of students from each group. The data measuring test anxiety was thus collected using Nist and Diehl questionnaire for measuring test anxiety. The collected data was analyzed by using mean, standard deviation, *t*-test and multiple regression model. **Results:** The results of the study indicated that there is on the average moderate level (2.50 ± 0.63) of test anxiety among university students. On the whole test anxiety has significant negative ($\beta = -0.02$, $F = 9.37$, $\alpha = 0.00$) effect on academic achievement of university students. Test anxiety significantly has negative ($\beta = -0.18$, $F = 8.6$, $\alpha = 0.00$) impact on academic achievement of male students as compared to female students at university level. **Conclusions:** University students experience moderate level of test anxiety. The test anxiety decrease academic achievement of university students. Male students' academic achievement is profoundly hindered.

Keywords: Academic Achievement, Test Anxiety, University Students

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INTRODUCTION

One of the important and growing concerns of the public health officials is the mental health of the students. It is because mental health affects the general behaviour, eating and sleeping habits, as well as the academic achievement of the students. One of the important determinants of the mental health is the level of anxiety. An undesirable and unclear feeling during prediction of dangerous situations is called anxiety.¹ Extreme form of these feeling negatively affects the physical and mental health of the individual and ultimately personal, social, occupational and educational performance is badly affected.² This stress and dissatisfaction is increased in university life during the process of taking new knowledge, adapting to new roles, and grasping new concepts. The most important challenge is the achievement of highest level of academic performance which causes students to experience great stress and anxiety.³ It is because during examination time, the students experience greater anxiety.⁴ This anxiety is called test anxiety, which affects the academic achievement of students due to inability to tackle the time of tests.⁵ Their performance is decreased because their inability to reflect on the information contained in the content is decreased and as a result their academic performance is decreased.⁶

Test anxiety is the unwanted response to the evaluation which is the problem faced by the students all over the world.⁷ Little anxiety is beneficial as it helps

the students to become motivated and thus learn new material effectively but greater anxiety negatively affects the academic achievement of the students.⁸ Greater anxiety is associated with certain psychological symptoms before or during test such as restlessness, difficulty in concentration, muscle contraction, and abdominal pain.⁹ These symptoms have negative effects on the general life and professional growth of the students.¹⁰

In Egypt, a research study conducted on 988 university students, reported that 71% of the students had moderate level of anxiety and depression.¹¹ In Pakistan, a study reported that 70% of students had test anxiety and depression in Karachi.¹² With low anxiety students have better academic achievement while higher anxiety has negative effects on academic achievement of students.¹³ The objectives of the study were to investigate the effect of test anxiety on academic achievement of university students and explore the Gender differences in effect of test anxiety on academic achievement of university students.

SUBJECTS AND METHODS

This study was approved by the research Ethics/Bioethics committee, The University of Haripur. BS students of the University of Haripur consisted of the population of the study. A sample of 360 students was selected randomly from of Biological Sciences and social sciences groups of the University of Haripur. The biological and social sciences groups comprised of

thirteen departments. Information about test anxiety was collected from all 13 departments of the University of Haripur. These students were selected from senior semesters, i.e., from 4 to 8 semesters, aged 19 to 23 years, studying in the University of Haripur. Written informed consent was taken from the participants of the study. The data was thus collected using Nist and Diehl¹⁴ questionnaire for measuring test anxiety. While Cumulative Grade Point Average (CGPA) of the students was collected as academic achievement.

Students studying in the BS programs were included in the study while students studying in M. Phil/ PhD were excluded from the study. Cross Sectional research design was used in this study. The data was collected from departments from March to May 2017.

The data was collected through the use of stratified random sampling technique. This study included the 10 items questionnaire about test anxiety. The questionnaire by Nist and Diehls¹⁴ was adopted to determine if the students experience mild or severe test anxiety. This questionnaire can be used for testing the anxiety level on all testing experiences or any particular subject (history, science, math etc.) at a time. Since this questionnaire is short and has ease in determination of test anxiety, therefore, it was adopted for collecting the required data. This scale comprised of the options of 'Always', 'Often', 'sometimes', 'Rarely', 'Never' ranging from 5 (Always) to 1 (Never).

In order to compute the reliability of the adopted questionnaire, a pilot study was conducted on 40 students (20 male, 20 female) from the target population before the actual data collection process. These students were not included in the actual data collection. As a result of the pilot study the Cronbach Alpha reliability coefficient of the instrument for this study was 0.74.

The departments of the university were personally visited for the collection of the required information. The students were approached after formal approval of the Heads of the respective departments. The heads of the departments were agreed to collect the data and possible time consumption to collect the required data and completion of the questionnaire.

After randomly selecting the students, they were ensured that the data collected from them will be used only for research purpose and their names will be kept confidential. The distributed questionnaires were completed by the students in 10–15 minutes.

Percentage, Mean, standard deviation, *t*-test, and regression analysis was used to analyze the data. Percentage, mean and standard deviation was used to describe the level of test anxiety of the university students. Student's *t*-test was used to compare the test anxiety level of male and female students, while regression analysis was used to explore the effect of test anxiety on academic achievement of the university students. Data analysis was done using SPSS-20.

RESULTS

In this research it is attempted to describe the test anxiety level of the university level students. Further the effect of test anxiety level on academic achievement and its comparative effects on academic achievement of female and male students were explored in this study. The underlying tables describe the results.

Table-1 describes the overall test anxiety of the university students. it also shows the comparison of male and female students regarding test anxiety.

Effect of test anxiety on academic achievement is highlighted in Table-2. Test anxiety has significant negative effect on academic achievement of the university students ($\beta = -0.13, \alpha = 0.002$).

According to table 3, 4% of the variation in academic achievement of male students of university is brought about one unit increase in test anxiety. Table-3 also highlights the significant negative effects of test anxiety on academic achievement of male students at university level ($\beta = -0.18, \alpha = 0.004$).

Table-3 also depicts that 0.4 percent changes in academic achievement are caused by one unit increase in test anxiety of female students of university. Although not significant, but negative effect of test anxiety is evident from the value of β ($\beta = -0.08, p = 0.18$).

Table-1: Comparison of test anxiety among male and female students

Gender	n	Mean±SD	p	Overall description
Female	180	2.5±0.57	0.85	2.5±0.60
Male	180	2.4±0.60		

Table-2: Impact of academic achievement due to test anxiety

	Beta	p
Anxiety	-0.13	0.002
R= 0.16, Adj. R ² = 0.02, f= 9.4		

Table-3: Gender differences in effect of test anxiety on academic achievement of university students

		β	R	Adj. R ²	F	p
Test Anxiety	Male	-0.18	0.22	0.04	8.60	0.004*
	Female	-0.08	0.09	0.004	1.80	0.18

DISCUSSION

The overall purpose of this research was to explore the effect of test anxiety on academic achievement of university students of BS level at the University of Haripur. This study was carried out to investigate the effect of test anxiety on academic achievement of university students and explore the Gender differences in effect of test anxiety on academic achievement of university students.

Our results showed that the university students had moderate level of test anxiety. In Karachi a research study reported that 71% of the students have moderate level of anxiety and depression.¹² Compared to these

results, the other countries have their own level of anxiety. For example, the anxiety level in Saudi Arabia was 71.9%.¹⁵ In Malaysia and Thailand, the anxiety level was 42% and 61% respectively. Difference between our results and those of others may be because of tools used, differences in population and health care system, or cultural differences.^{16,17}

Our results further indicate that test anxiety negatively affects the academic achievement of the students. It reflects that as anxiety increases, students perform poorly.¹⁸ Since university age is a transitory one where students move towards adulthood which carries its own stresses and therefore, the academic achievement is declined.¹⁹ These results are in line with the findings of Khalid and Hasan¹³ who explored that with low anxiety students have better academic achievement while higher anxiety has negative effects on academic achievement of students. In the same way the hampering effect of test anxiety with academic achievement of the students was explored in other researches as well.²⁰ All the two results including our findings support Hebb's theory and cognitive interference model²¹. According to these theories if the anxiety of the test takers increases above optimal level, the students forget what they have learned. Interference is developed between relevant and irrelevant responses due to the anxious state of the person. The possible explanation can be that due to increase in anxiety, increase in heart beat, excessive sweating, high blood pressure, headache, can be caused. All these are expected to weaken the body system of the students which may cause to decrease their academic achievement because they may not organize the information.

Results of our study further highlight that there is profound negative effect of test anxiety on academic achievement of male students as compared to female students. These results are contradictory to the results of previous work²², where it was found that females become victims of anxiety and hence their life including academic achievement is negatively affected. The possible reason of contradictory results may be due to cultural and social differences.¹⁸ Since males have the responsibility to cater to the whole family, they become more anxious in challenging situations due to which their performance is badly affected. Similarly the higher test anxiety among female may be because of the high level of emotionality despite the fact that they have the same level of worry about tests¹⁸. Furthermore, the gender difference in test anxiety may be due to the variance in educational background, and intellectual capability in gender variation.²³ So it can be implied also that students indulge in prolonged thinking which leads of rumination and worry, anxiety and ultimately reduced academic achievement.²⁴

CONCLUSIONS

University students experience moderate level of test anxiety. The test anxiety decrease academic achievement of university students. Among them, male students' academic achievement is profoundly hindered.

RECOMMENDATIONS

Behavioural, cognitive, and affective measures should be taken for effectively dealing with test anxiety. For the successful completion of course, the teachers should convey in detail about the course. Efforts should be made to identify and treat the students with higher anxiety.

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REFERENCES

1. Asadullapoor A, Fati L, Gharaee, B. Metacognitive anxiety and the immediate and delayed judgment of learning. *J Psychiatry Clin Psychol* 2010;16(4):412–19.
2. Zahrakar K. *Stress Consultant*. 1st ed. (chapter1). Tehran: Bal University Publication; 2008.
3. Shamsuddin K, Fadzil F, Ismail W, Shah S, Omar K, Muhammad N. Correlates of depression, anxiety and stress among Malaysian university students. *Asian J Psychiatr* 2013;6(4):318–23.
4. Leta S. Depression Rates among College Students on the Rise. *Daily California*. URL: <https://archive.dailyca.org/archives.php?year=2001> [Accessed 25 Jan 2019].
5. Amiri-Majd M, Shahmoradi A. Effects of cognitive behavioral therapy in reducing anxiety. *Behav Sci* 2008;7(3):53–64.
6. Markman U, Balik C, Braunstein-Bercovitz H, Ehrenfeld M. The effects of nursing students' health beliefs on their willingness to seek treatment for test anxiety. *J Nurs Educ* 2010;50:248–51.
7. Khosravi M, Bigdeli I. The relationship between personality factors and test anxiety among university students. *J Behav Sci* 2008;2(1):13–24.
8. Coon D, Mitterer J. *Psychology of Test anxiety*. J Cengage Learn 2009;28(3):48–53.
9. Porto A. Definitions and classification of NANDA nursing diagnoses. *NANDA Int* 2013;68(4):603–9.
10. Ferreira CL, de Almondes KM, Braga L, Mata AN, Lemos CA, Maia EM. Evaluation of trait and state anxiety in first year students. *Cien Saude Colet* 2009;14(3):973–81.
11. Ibrahim AK, Kelly SJ, Glazebrook C. Reliability of a shortened version of the Zagazig Depression Scale and prevalence of depression in an Egyptian university student sample. *Compr Psychiatry* 2011;53:638–47.
12. Khan MS, Mahmood S, Badshah A, Ali SU, Jamal Y. Prevalence of depression, anxiety and their associated factors among medical students in Karachi, Pakistan. *J Pak Med Assoc* 2006;56:583–6.
13. Khalid R, Hasan SS. Test anxiety in high and low achievers. *Pak J Psychol Res* 2009;24(2):97–114.
14. Nist P, Diehl M. PHCC test anxiety questionnaire. 1990. Available at: <https://docplayer.net/24557834-Phcc-test-anxiety-questionnaire.html>
15. Sani M, Mahfouz MS, Bani I, Alsomily AH, Alagi D, Alsomily NY, *et al*. Prevalence of stress among medical students in Jizan University, Kingdom of Saudi Arabia. *Gulf Med J* 2012;1(1):19–25.

16. Abdallah AR, Gabr HM. Depression, anxiety and stress among first year medical students in an Egyptian public university. *Int Res J Med Sci* 2014;2(1):11–9.
17. Amir M, El-Gilany AH, El-Hawary A. Does gender predict medical students' stress in Mansoura, Egypt? *Med Educ Online* 2008;13:12. doi: 10.3885/meo.2008.Res00273
18. Khalaila R. The relationship between academic self-concept, intrinsic motivation, test anxiety, and academic achievement among nursing students: Mediating and moderating effects. *Nurse Educ Today* 2015;35(3):432–8.
19. Ibrahim MB, Abdelreheem MH. Prevalence of anxiety and depression among medical and pharmaceutical students in Alexandria University. *Alexandria J Med* 2015;51:167–73.
20. Chapell MS, Blanding ZB, Silverstein ME, Takahashi M, Newman B, Gubi A, *et al.* Test anxiety and academic performance in undergraduate and graduate students. *J Educ Psychol* 2005;97(2):268–74.
21. Hebb DO, (Ed). *A textbook of Psychology*. 3rd ed. Philadelphia PA: WB Saunders; 1972.
22. Amir M, El Gillany AH. Self-reported depression and anxiety by students at an Egyptian medical school. *J Pak Psych Soc* 2010;7(2):71–8.
23. Sherina MS, Rampal L, Kaneson N. Psychological stress among undergraduate medical students. *Med J Malaysia* 2004;59:207–11.
24. Sarason IG. Anxiety, self-preoccupation and attention. *Anxiety Res* 1988;1(1):3–7.

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