

Exploring the Relationship between Test Anxiety and Academic Achievement among Female Nursing Students at Zagazig University

Hanem A. A. Ahmed

Psychiatric & Mental Health Nursing Department, Faculty of Nursing, Zagazig University, Egypt

Email of corresponding author: drhaahmed@hotmail.com

Abstract: Test anxiety is an devastating feeling of trouble and suffering among the students around the world. Test anxiety can be a overwhelming problem for many college students; because it may impair their performance and comfort in the long run. This study was aimed to explore the relationship between test anxiety level and academic achievement among nursing students. A descriptive correlational design was utilized in this study. A convenience sample of 160 female students in college of nursing, Zagazig university who approved to join in the study starting from 1st to 4th year of undergraduate. Data were collected by using socio-demographic data sheet and test anxiety questionnaire. The study results indicated that the mean scores of total test anxiety according to grade point average highly statistically significantly differ among A(90 -100%) , B (80-<90%) , C (70-<80%) , and D (60-<70%) grades ($P<0.01$). there were highly statistically inverse correlation between total test anxiety and grade point average ($P<0.01$). it was concluded that test anxiety has a significant and efficient impact on nursing students' performance. It was recommended that the students with superior test anxiety must be recognized and treated in order to increase their academic attainment.

Keywords: test anxiety, academic achievement, nursing students

I. Introduction

Anxiety is a future oriented mood state linked with preparation for potential, forthcoming negative events^[1]. Every year, most students perform less well than expected in university because of elevated test anxiety, which is a type of anxiety and defined as " the combination of physiological over-arousal, tension and somatic symptoms, along with worry, dread, and fear of failure, that occur before or during test situations" ^[2]. Also, Test anxiety is defined as impairments in concentration, memory, center of attention, bodily health, emotions and individual potential. This anxiety decrease many students' test taking capabilities. Also, their ability to display knowledge of the subject being tested is decreased, resulting in decreased test scores and overall grades. Test anxiety occurs when the students acknowledge their performance is under examination ^[3].

Test anxiety is not completely bad. In fact a low level of it is normal and wanted to maintain concentrate, motivate and help the students to stay mentally and physically attentive ^[4]. However, high level of test anxiety is dangerous and be able to cause emotional or physical suffering, attention difficulties and emotional worries. It interferes with students' capability to get ready for and do on tests. High level of anxiety exerts a negative effect on school learning ^[5].

Two part construct related to the effects of test anxiety on students are whether it is the test anxiety causing the poor grades, or vice versa. This has led to two models: the interference and the skill deficit models. The interference model says:; students with high test anxiety are plagued by worry and discomfort that interferes with their test taking ability. The skill deficit model is the opposite, stating that high test anxiety in students results from being poorly prepared for an examination ^[6].

It was found that, high level of emotional distress correlated with decreased academic achievement and higher overall student failure rates ^[7]. Also, test anxiety can have broader consequences, negatively affecting a student's social, emotional and behavioral development, as well as their feelings about themselves and school ^[8]. Female students experience higher levels of test anxiety than perform males. Less is known, however, about whether these differences between males' and females' reported levels of anxiety may impact on their academic achievement ^[9].

Nursing programs can be viewed as highly stressful settings. Nursing students are under pressure for taking various tests throughout their college and professional. Nursing students are exposed to a variety of test

questions/formats such as Clinical Course Evaluation (CCE) performances, clinical exams, and written test. They are also required to perform supervised nursing procedures with patients. Nursing students have nearly double the rate for moderately high to high test anxiety in comparison to the general public and high school students. Test anxiety affects 30% of all nursing students ^[10]. Also, Evans et al. found that Nursing students have been more test-anxious than other students in general ^[11]. On the basis of this viewpoint, this study was carrying-out to explore the relationship between test anxiety and academic achievement among female nursing students at Zagazig university.

The aim of the study

This study aimed to explore the relationship between test anxiety and academic achievement among female nursing students at Zagazig university

Subject and methods

Research question:

Is there a relationship between test anxiety and academic achievement among female nursing students?

Research design : A descriptive correlational design was used in this research

Setting

This research was performed at college of nursing zagazig university.

Sample

A Convenience sample of 160 students who were invited and agreed to participate in the study starting from 1st to 4th year of undergraduate.

Tools for data collection

Data was collected by using:

- a- Sociodemographic data sheet: this sheet include, level of education of student's father and mother, residence, number of family members, student's order among sibling, and grade point average (GPA).
- b- The Test Anxiety Questionnaire ^[12] : It was used to assess test anxiety in this study. The scale has 48-items in the form of 5-point, Likert-scale ranging from (1) not at all to (5) very much. A Test Anxiety Index (TAIN) score can be calculated by summing the scores for each item. A score of 160 or more indicates that the students may have high level of test anxiety. Scores ranges from 80 to 160" indicates that the students have a moderate level of test anxiety. The score that is lower than 80 indicates that the student has a low test anxiety level.

Content validity:

The instrument was translated into Arabic language using the translation-back-translation method to ensure its validity. Validity was recognized for face and content validity by five experts from nursing faculty who revised the tools for clearness, relevance, applicability, comprehensiveness, understanding and easiness for implementation and according to their opinion minor modification were applied.

Pilot Study:

A pilot study was conducted before doing the actual study on 10% of the sample for test clarity of the scale items as well as to guess the time needed for data collection. Needed modifications were done. The tool was finalized according to the results of the pilot, and these participants were expelled from the sample.

Fieldwork

Data were collected from students throughout their schedule class time. and invited them to participate after explaining to them the purpose and procedures of the study. Those who agreed to participate were asked to complete questionnaire. Data collection lasted for I month at April 2015.

Administrative and ethical considerations:

An official permission to carry out the study was secured through an official letter to dean of college of nursing, Zagazig university explaining the purpose of the research to get the permission for data collection. The researcher met with students to clarify the reason of the study and to get verbal permission to contribute after informing them about the rights to reject or extract from the study with no unpleasant consequences. Participants were reassured about the confidentiality of the information composed, and that it would be used only for the reason of scientific research. No harmful maneuvers were performed or used, and no foreseen hazards were anticipated from conducting the study

Statistical analysis

By using SPSS 17.0 statistical software package Data entry and statistical analysis were done. Data were presented using descriptive statistics as means and standard deviation for quantitative variables, and frequencies and percentages for qualitative variables. Analysis of variance (F-test) used for comparison of mean scores of variables. Correlation analysis was done by Pearson correlation coefficients (r). Statistical significance was considered at P-value< 0.05.

II. Results

Table 1: Distribution of the sample according to demographic characteristics of studied subjects (n=160)

Item	No	%
Father education level		
• Illiterate	33	20.6
• Read and write	40	25.0
• Moderate education	58	36.3
• High education	29	18.1
Mother education level		
• Illiterate	13	8.1
• Read and write	14	8.8
• Moderate education	65	40.6
• High education	68	42.5
Residence		
• Urban	68	42.5
• Rural	92	57.5
Number of family		
• <3	2	1.2
• 3-5	15	9.4
• >5	143	89.4
Student's order among sibling		
• First	31	19.4
• Middle	104	65.0
• Last	25	15.6

As shown in **table 1**, more than one third (36.3%) of students' fathers had moderate education. For students' mothers, 42.5% of them had high education. More than half of the studied sample (57.6%) were from rural areas. As regards number of family, majority of the studied students' family were more than five numbers. About two thirds of the students (65.0%) were middle in order among their siblings.

Table 2: Distribution of the sample according Academic level and Grade Point Average(GPA) of studied subjects (n=160)

Items	No	%
Academic year		
• 1 st year	16	10.0
• 2 nd year	46	28.8
• 3 rd year	44	27.5
• 4 th year	54	33.7
Grade Point Average (GPA)		
• A (90 -100%)	16	10.0
• B (80-<90%)	61	38.1
• C (70-<80%)	70	43.8
• D (60-<70%)	13	8.1

Table 2 indicates that, the study sample consisted of (160) nursing students more than two fifths (43.8%) of their grade point average were from 70-80%. Also, more than one third of students (33.7%) were at 4th year

Table 3: Distribution of the sample according to test anxiety

Test anxiety	No	%
• Mild anxiety	6	3.8
• Moderate Anxiety	101	63.1
• Severe Anxiety	53	33.1
• Not at all	6	3.8
• A little	28	17.5
• A fair amount	81	50.5
• Much	42	26.3
• Very much	3	1.9

As shown in **table 3**, near two thirds (63.1%) of the studied sample had moderate test anxiety. Also more than half (50.6%) of them had a fair amount of test anxiety.

Table 4: Mean square of total test anxiety according to academic year

Item	Academic years				F	P
	1 st year n=16	2 nd year n=46	3 rd year n=44	4 th year n=54		
Total Test anxiety	M±SD	M±SD	M±SD	M±SD	2.08	.058
	158.8±25.9	142.2 ±33.2	142.9±30.9	149.0±28.9		

Table 4 demonstrates that, the mean score of total test anxiety according to academic levels didn't statistically significantly differ among 1st, 2nd, 3rd, and 4th academic year (P>0.05).

Table 5: mean square of total test anxiety according to Grade Point Average (GPA)

Item	Grade point Average (GPA)				F	P
	A (90 -100%) n=16	B (80-<90%) n=61	C (70-<80%) n=70	D (60-<70%) n=13		
	M±SD	M±SD	M±SD	M±SD		
Total test Anxiety	139.6±33.9	138.2±29.6	151.7±29.2	164.1±28.5	4.09	.008**

(**)*statistically significant at P<0.01 levels*

It is obvious from **table (5)** that, the mean scores of total test anxiety according to grade point average highly statistically significantly differ among A(90 -100%), B (80-<90%), C (70-<80%), and D (60-<70%) grades (P <0.01).

Table 6: mean square of total test anxiety according to father educational level, mother educational level, residence, number of family and student's order among sibling

Items	Total test anxiety		
	M±SD	F	P
Father education level			
• Illiterate (n=33)	146.4 ±35.2	.541	.556
• Read and write (n=40)	143.2 ±27.01		
• Moderate education (n=58)	150.1±27.3		
• High education (n=29)	143.1±36.3		
Mother education level			
• Illiterate(n=13)	148.5±29.3	.400	.753
• Read and write (n=14)	140.9±42.1		
• Moderate education (n=65)	144.5±30.2		
• High education (n=68)	148.9±29.1		
Residence			
• Urban (n=68)	147.1±29.1	.042	.837
• Rural (n=92)	145.9±31.8		
Number of family			
• <3 (n=2)	130.0±17.1	.288	.750
• 3-5 (n=15)	146.1±26.1		
• >5 (n=143)	146.6±31.3		
Student's order among sibling			
• First (n=31)	146.9±33.8	.133	.875
• Middle (n=104)	145.5±30.7		
• Last (n=25)	149.0±27.1		

Table (6) shows that, the mean score of total test anxiety according to father and mother educational level didn't statistically significantly differ among illiterate, read and write, moderate education, and high education (p>0.05). Also, the mean score of total test anxiety according to residence didn't statistically significantly differ between urban and rural residence (P>0.05). Also, this table demonstrates that, the mean score of total test anxiety according to number of family didn't statistically significantly differ among less than 3, from 3 to 5 and more than 5 persons. Also, the same table shows that, mean score of total test anxiety according to student's order among sibling didn't statistically significantly differ among first, middle, and last sibling order (P>0.05).

Table 7: Correlation between total test anxiety and Grade point average (GPA)

Test Anxiety	R	P
Grade Point Average (GPA)	-.247	.002**

(**)correlation is significant at the 0.01 level

As observed in **table 7**, there are highly statistically inverse correlation between total test anxiety and grade point average ($P < .01$)

III. Discussion

This research was conducted to explore the relationship between test anxiety and academic achievement among nursing students. The current study demonstrated that, 3.8 % of the students had low test anxiety, 33.1% of the students had severe test anxiety and 63.1% of the students had moderate test anxiety. This result can be interpreted as a force of scoring high on tests and fear of failing in exam. This showed the complexity of thinking process student go through while preparing for tests. This result similar to result of Nicaise who found that debilitating test anxiety affected 10-30% of all students^[13]. However these results differe slightly with the results of Onyekuru & Ibeghunam who found that 28.57% of participants had low test anxiety, 18.13% of them had high test anxiety, and more than half of the students (53.3%) had reasonable test anxiety^[14]. The difference may related to the difference in culture and the college of students in current study is nursing however in other research was department of curriculum studies and educational technology.

In accordance with the result of Rafiq, et al. The result of current study found that, the mean score of total test anxiety according to academic years didn't statistically significantly differ among four academic years^[15].

The results of current study revealed that, the mean scores of total test anxiety according to grade point average highly statistically significantly differ among A(90 -100%) , B (80-<90%) , C (70-<80%) , and D (60-<70%) grades. The current study demonstrated that, there are highly statistically inverse correlation between total test anxiety and grade point average. The study result may be interpreted as test anxiety gives increase to frustration which negatively affects information coding and recalling. The current study contradict with the result of Dawood et al who found no significant relationship between test anxiety and undergraduate nursing students' grade point average^[16]. Also, Cheraghian et al found out no meaningful relationship between test anxiety and academic performance^[17].

The current results agreed by previous researches that revealed a significant and negative relationship between test anxiety and academic performance^[18-19] . Also, a study conducted by Nicholson found that test anxiety and academic achievement are attached to each other^[20]. Khalid and Hasan conducted a study on sample of 187 undergraduate students to reveal the relationship between test anxiety and academic performance and revealed that students with academic achievement have low test anxiety scores and vice versa^[21]. Also, Onyekuru & Ibeghunam found a weak but significant negative relationship between test anxiety and academic achievement of the students^[14].

IV. Conclusion

Based on the results of current study the following conclusion can be confirmed:

- Majority of nursing students had moderate test anxiety
- The total test anxiety mean score didn't statistically significant differed among fourth academic years
- Strong and highly significant negative relationship found between test anxiety and grade point average of the students
- When students are anxious before and during tests, test anxiety has a significant and effective impact on their performance.

V. Recommendations

Based on findings of this study, the following recommendations are suggested:

- To effectively manage test anxiety, teachers and parents can help students throughout the use of cognitive, emotional and behavioral strategies.
- The students should be informed about the character of courses, length of the semester, and level of obligation necessary for the successful completion of the course by the faculty and administration of departments.

- The students with superior test anxiety must be recognized and treated in order to increase their academic attainment
- Replicate the current study on larger sample size using a combined quantitative and qualitative research approach to better understand the factors leading to test anxiety among undergraduate nursing students

References

1. D, H. Barlow, *Anxiety and its Disorders: The Nature and Treatment of Anxiety and Panic* (2nd ed, New York: Guilford Press, 2002).
2. M. Zeidner, *Test anxiety: The state of the art.* (New York, NY: Plenum, 1998).
3. U. Markman, C. Balik, H. Braunstein-Bercovitz, and M. Ehrenfeld, The effects of nursing students' health beliefs on their willingness to seek treatment for test anxiety. *Journal of Nursing Education*, 50, 2010, 248-251.
4. P. Birjandi and M. Alemi, The impact of test anxiety on test performance among Iranian EFL learners' brain, *Broad Research in Artificial Intelligence and Neuroscience*. 1 (4), 2010, 45-68.
5. A. Anastasi, and S. Urbina, *Psychological Testing* (New York: Prentice-Hall, Inc.1997).
6. M. T. Chavous, Evaluation (test) anxiety. *Psychology of Classroom Learning*, 1, 2008, 387-389.
7. M. Vaez and L. Laflamme, "Experienced stress, psychological symptoms, self-rated health and academic achievement: A longitudinal study of Swedish university students". *Social Behavior and Personality*. 36, 2008, 183-196.
8. S. J. Salend, Teaching students not to sweat the test, *Phi Delta Kappan*. 93(6), 2012, 20-25.
9. D. L. Bandalos, K. Yates, and T. Thorndike-Christ, Effects of math self-concept, perceived self-efficacy, and attributions for failure and success on test anxiety, *Journal of Educational Psychology*, 87,1995, 611-623.
10. R. Driscoll, G. Evans, G. Ramsey, and S. Wheeler , *High Test Anxiety among Nursing Students*, (ERIC, 3pp, 2009)
11. G. Evans, G. Ramsey, and R. Driscoll , *Test-anxiety program and test gains with nursing classes*, 2010. [ONLINE] Available at: <http://www.testanxietycontrol.com/research/nurses10.pdf>. [Last Accessed February 1 2012].
12. R. M. Suinn, The STABS, a measure of test anxiety for behavior therapy: Normative data, *Behavior Research and Therapy*, 7, 1969, 335-339. Revised: Summer 2002
13. M. Nicaise, Treating test anxiety: A review of three approaches. *Teacher Educational Practices*. 22 (7), 1995, 65-81.
14. B. U. Onyekuru, and J. O. Ibegunam, Relationships among Test Anxiety, Locus of Control and Academic Achievement among College Students. *European Scientific Journal*. 10 (13), 2014, 387-401.
15. R. Rafiq, S. Ghazal, and Y. N. Farooqi, Test anxiety in students: semester's vs. annual system. *Journal of Behavioral Science*, 17(1-2), 2007, 79-95.
16. E. Dawood, H. AlGhadeer, R. Mitsu, N. Almutary, and B. Alenezi, Relationship between Test Anxiety and Academic Achievement among Undergraduate Nursing Students. *Journal of Education and practice*, 7(2), 2016, 57-65.
17. B. Cheraghian, M. Fereydouni, S. BarazPardejani, and N. Bavarsad, Test anxiety and its relationship with academic performance among nursing students. *Journal Knowl Health*. 3(4),2008, 25-29.
18. M. S. Chapell, Z. B. Blanding, M. Takahashi, M. E. Silverstein, B. Newman, A. Gubi, and N. Mccann, Test anxiety and academic performance in undergraduate and graduate students. *Journal of Educational Psychology*, 97 (2), 2005, 268-274.
19. M. A. Kassim, R. M. Hanafi, and D. R. Hancock, Test anxiety and its consequences on academic performance among university students. *Advance in Psychology Research*. 53, 2008, 75-95. Retrieved July 06, 2009, from [http://www. books.google.com.pk/books?](http://www.books.google.com.pk/books?)
20. A. M. Nicholson, *Effects of test anxiety on student achievement (ACT) for college bound students*. Dissertation Abstract International. DAI-A-70/07, AAT 3366126, 2009.
21. R. Khalid, and S. S. Hasan, Test anxiety in high and low achievers. *Pakistan Journal of Psychological Research*, 24, 2009, 3-4.