On the relationship between test anxiety and academic performance

Farhad Ghorban DordiNejad a *, Hamideh Hakimi b, Maryam Ashouri c, Maryam Dehghani b, Zhaleh Zeinali b, Maryam Sadegh Daghighi c, Naghmeh Bahrami b

a Shahid Rajaee Teacher Training University, Lavizan Area, 16785-163, Iran
b Guilan university of Medical Science, Shahid Beheshti Collegeof Nursing and Midwifery, Shahid Beheshti Blvd., Rasht P.O. Box: 41469-39814, Iran
c Alborz University, Mohamadieh, Qazvin P.O. Box: 34918-1155, Iran

Abstract

The present study investigates the relationship between test anxiety and academic performance of Iranian university students in a Medical university. For this purpose, the valid and reliable questionnaire of Sarason was administered to 150 female and male students. Man Whitney and correlation Spearman methods revealed that test anxiety has negative effect on participants' academic performance. Participants' psychological and physiological experience was also descriptively discussed before, during, and after taking the test. Results show that students studying in lower degrees are more anxious than those who are more familiar with the test taking process in academic environment.

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1. Introduction

Although anxiety is a common undeniable phenomenon in human being’s life that affect their performance and effectiveness in different situations, an average level of anxiety is useful in keeping people hardworking and responsible of what they have to do, and also helpful for people in having a more sustainable and prosperous life (Kahan , 2008; Donnelly, 2009). High level of anxiety threatens individuals' mental and physical health and has a negative effect on their personal, social, familial, occupational, and educational performance (Zahrakar, 2008). One of the broadest research areas in recent years has been test anxiety and its dimensions. Researches show that
different types of disorders caused by anxiety have a high frequency all over the world. One of these deficiencies is test anxiety or stress of being evaluated (Cheraghian et al, 2008). It is a kind of anxiety which happens when a person is taking a test or is being evaluated by a test administrator. Due to this fact, the test participants might experience a feeling of concern that their performances are being carefully watched out to be evaluated (Cheraghian et al 2008). A low level of stress is necessary, but it is sometimes so complicated that limits individuals’ performances in test and leads to a behavioural disorder or low confidence or poor academic performance. Individuals sometimes hate studying and education just because of the evaluation and sitting a test (Moadeli, Ghazanfari, 2005).

An acceptable level of test anxiety in students motivates them to work hard and provides them with its positive consequences. Nowadays, test anxiety is more observed among students, and it might be due to more prominent role of tests in educational system than some decades ago. This is the reason why about 10 million students at schools and about 15 to 20% of university students in USA experience test anxiety (Chapel et al, 2005). Moreover, research shows that older students feel more stressed than younger students and female students experience more anxiety than male students (Ginter et al, 1982). Test anxiety undeniably plays an important role in students' performance. Sarason (1978) believed test anxiety is a kind of self-preoccupation that is shown with low self-esteem and it leads to negative cognitive evaluation, lack of concentration, unpleasant physiological reactions, and low proficiency in test performance. Therefore, we expect a meaningful relationship between test anxiety and students' academic performances. Some scholars found a negative correlation of \( p < 0.01 \) between test anxiety and students' performances (Hong and Karstensson , 2002; Onyeizugbo, 2010; Abulghasemi, 2009). They also believe that high level of anxiety creates intrusive thoughts which doesn’t associate with test and don't let them concentrate on test. All these cut and off thoughts cause failure in learning. However other scholars think that test anxiety happens because of the lack of competency in students rather than mentioned reasons. Some other researchers believe that no relationship has been indicated between test anxiety and students' performances (Cheraghian, 2007).

According to all attempts have already been done on test anxiety and students' performances, it is clear that studying different dimensions of anxiety can be effective in the way we organize the plans we have for educational system. The present study was conducted to achieve a relationship between test anxiety and students' performances.

2. Methodology:

Present study is a descriptive and cross-sectional research.

2.1. Participants:

Participants in this study are students of a Medical university in Iran. They are 80 female and 70 male students. They were chosen according to random sampling and on the basis of criterion that they had passed at least one semester at university. They didn't receive any psychotherapy treatment. Participants answered the questionnaire between their midterm test and final test and the grade point average (GPA) of the last semester at the time of research was identified for data analysis.

2.2. Instrument:

To collect data, Sarason Test Anxiety questionnaire was used and a section of demographic questions was added. This part including 7 questions identifies participants' age, gender, marital status, degree, semester of education, grade point average (GPA), and major. Sarason questionnaire consisting of 37 items investigates students' test anxiety with true or false choices in answers. Troy, 1980 believed that Sarason questionnaire is the most famous test anxiety survey. Items in this questionnaire are designed in such a way that can investigate four aspects of test anxiety in students as: reaction, tension, anxiety, intrusive thoughts and physical symptom. Sarason reported that the Cronbach's alpha of this questionnaire in a course of 6 weeks was 0.91 and in this study the reliability Cronbach's alpha is 0.81.

2.3. Data analysis:

Descriptive analysis was conducted on data collected and a table of frequency and a graph have been presented in the study. Then, by non-parametric methods of Man Whitney and Spearman correlation, relationship between variables was analyzed. Relationship between test anxiety, gender, and material status was analyzed by Man Whitney while relationship between test anxiety with GPA, age, and semester of education was analyzed by
Spearman correlation. These analysis procedures were done by software SPSS 16. P value of all methods was considered 0.05.

3. Results

In present study, there were 150 participants categorized as 70 male (46.7%) and 80 female students (53.3%). They were 18-39 years old. Mean (SD=2.96) of their age was 22 years old. Mean (SD=6.34) of test anxiety of the total participants was 14.33. 66 students (44%) had low level of test anxiety (≤ 12), 53 students (35.3%) had moderate level of test anxiety (12-20), and 31 students (20.7%) had high level of anxiety (>20). Mean of females' test anxiety was 15.2 (SD=6.35) and males' test anxiety 13.34 (SD=6.23). The analysis of data didn't indicate any meaningful statistical relationship between variables (p=0.07). Mean of test anxiety of single students was 14.46 (SD=6.34) and married students 13.52 (SD=6.4). Analysis of these data showed that there is no meaningful relationship between test anxiety and marital status (p> 0.05).

<table>
<thead>
<tr>
<th>Demographic Information of Participants</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>70</td>
<td>46.7%</td>
</tr>
<tr>
<td>Female</td>
<td>80</td>
<td>53.3%</td>
</tr>
<tr>
<td>Higher than Diploma</td>
<td>25</td>
<td>16.7%</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>87</td>
<td>7.58%</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>14</td>
<td>9.3%</td>
</tr>
<tr>
<td>Medical Science</td>
<td>24</td>
<td>11.16%</td>
</tr>
</tbody>
</table>

There was a negative correlation (p<0.05) between test anxiety and academic performance (GPA); however, there was a positive correlation between age and test anxiety (p=0.05). There was no meaningful relationship between test anxiety and semester at university (p=0.3). Mean test anxiety in two genders is illustrated in figure1.
The relationship between mean test anxiety and degree is presented in figure 2.

Figure 2: Mean of Test Anxiety in Different Degrees

4. Discussion

Test anxiety of majority of participants in this study was low and moderate. In a research that was conducted by Cheraghian (2008), 14% of participants didn’t have test anxiety and 48.7% of them had low level of test anxiety. The same result was indicated in a study by Moadeli and Ghazanfari (2003). However, in other researches done by Clark et al (1998), majority of participants had high level of test anxiety.

Diversity of results found in different researches shows that test anxiety in students is caused by different factors. As Moadeli and Ghazanfari (2004) believe different factors such as complicated syllabuses, test items, test frequencies, the way scholars behave, and educational discipline can affect on test anxiety of university students. It is clear that these factors don't have the same effect in different educational environments. Therefore, we can conclude that the majority of differences in different studies are caused by these factors. In this study, as the test anxiety is higher, their academic performances (GPA) are lower. Onyeizugbo (2010) showed that people with higher test anxiety has low academic performance (p < 0.001). Cassady Johnson, (2002); Jing (2007); Peleg, 2009) also contended that there's a negative correlation between test anxiety and academic performance. However, Cheraghian (2008) found out no meaningful relationship between test anxiety and academic performance. Besides, Cassady Johnson (2002) stated that it is not clear whether academic performance causes test anxiety or it is caused by a low academic proficiency.

5. Conclusion

Present study discusses the effect of test anxiety on medical students' academic performances at a medical university in Iran. There are different factors that play important roles in relationship between academic performance and test anxiety. According to data analysis, there is a negative correlation between academic performance and test anxiety (GPA). However, there is a positive correlation between age and test anxiety. Semester
of education doesn't affect on students' test anxiety. It seems there might be relationship between social-economic status of students, and it is recommended as further research.

References


