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The relationship between test anxiety and educational performance among the students at School of Health and Nutrition, Shiraz University of Medical Sciences in 2011

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ABSTRACT

Introduction: One of the most extensive areas of research in recent decades has been anxiety and related issues. Test anxiety includes unpleasant feelings and emotional experiences or frustration and concern in situations where a person feels his/her performance is being evaluated. In test situation, a large group of students experience widespread anxiety that negatively affect educational effectiveness which, consequently, deprives the society of a significant proportion of its workforce. **Materials and Methods:** The purpose of this cross - sectional study is to investigate the relationship between test anxiety and educational performance of 90 students from the School of Health and Nutrition, Shiraz University of Medical Sciences. The data collection instruments include Sarason's test anxiety scale, demographic characteristics questionnaire, and the students' grade point average (GPA). The questionnaires were administered to participants at final exams randomly. Data were entered into SPSS software and analyzed by descriptive tests, Mann–Whitney test, spearman correlation, Eta and t-test. **Results:** The mean anxiety score of students was 12.39 ± 5.39. Among the students investigated, 56.7% had mild anxiety, 32.2% had moderate anxiety, and 11.1% had severe anxiety. There was no statistically significant relationship between test anxiety and educational performance ($P = 0.97$), gender ($P = 0.12$), educational level ($P = 0.12$), and marital status ($P = 0.51$). In the present study, a significant relationship was observed between GPA and gender ($P = 0.002$) and marital status ($P = 0.05$). **Conclusion:** Given the high rates of moderate and severe levels of anxiety among the students, further research on the causes of the problem and appropriate interventions (counseling, planning to address the causes, referring at-risk students to medical centers, etc.) seem to be necessary.

KEY WORDS: Educational performance, students, test anxiety

INTRODUCTION

One of the most extensive areas of research in recent decades has been anxiety and related issues. Recent studies show that anxiety disorders (AD) are the most frequent ones in the general population [1].

Anxiety is an overwhelming unpleasant and ambiguous feeling accompanied by arousal of autonomic nervous system, headache, sweating, palpitations, spasm of the chest muscles, digestive discomfort, and restlessness. Anxiety is a warning sign that informs the person of an imminent danger [2]. It is not a new phenomenon and men at all ages and in all cultures experience it. Anxiety plays an important role in the life and health of humans [3]. A moderate anxiety level is regarded as an adaptive response leading to different reactions against natural disasters. Therefore, a little anxiety can have a positive influence on the life process and its changes [4] and [5]. However, there is a type of AD (negative anxiety) that can cause many psychological and physical diseases and illogical fear and panic that deprive people of a large part of their abilities [4]. Tests have long been the standard for assessing knowledge in various fields. At any age, we all feel test anxiety when we hear the word test [3]. Test results have a significant impact on various aspects of our life. As the students' level of education increases through the educational system, they are faced with a higher frequency of tests. This increases the pressures and expectations on the part of parents and the educational system and eventually increases test anxiety [6]. Test anxiety includes unpleasant feelings and emotional experiences or frustration and concern in situations

where a person feels his/her performance is being evaluated [1] and [6]. Low levels of anxiety during tests are necessary for the study, but some students have so much anxiety that can restrict their activities [3]. Bakhtiarpoor *et al* and Mirsamiei state that test anxiety is an unpleasant reaction to the evaluation in the class [7] and [8]. Some other theorists believe that test anxiety is associated with poor habits, attention deficits, trait anxiety, low self-esteem and confidence; educational performance at different levels, social phobia, and negative thoughts [7]. Anxiety as an educational phenomenon is closely related to the academic achievement and performance and even future performance of millions of students [7]. Some researchers believe that the anxiety help students get prepared for a better study. In contrast, others believe that reducing anxiety improves their performance. A person suffering from test anxiety is the one who knows the materials, but cannot remind or express them due to anxiety and arousal [1] and [8]. In fact, it seems that the reasons for failure of many students are not learning disabilities or mental weaknesses but are high levels of anxiety [6]. Although anxiety is not something new, empirical research on the issue has a history of just a few decades [6].

According to Hill, 15% of university students in America are experiencing anxiety [6]. In Iran, it seems that the fear of getting poor grades, family blames, and failure to pursue studies leads to psychological problems for students. Identifying and measuring test anxiety is important because every person in the world, depending on his/her experience and personality, can experience test anxiety [4].

A large group of students experiences anxiety in test situations that reduce their educational effectiveness. This negatively affects educational effectiveness which, consequently, deprive the society of a significant proportion of its workforce. Therefore, this study tries to investigate the relationship between test anxiety and educational performance of students from the School of Health and Nutrition, the Shiraz University of Medical Sciences. We hope the results can be effective in designing strategies and interventions to reduce this problem and increase the educational performance and effectiveness of this important group in the society.

MATERIALS AND METHODS

The purpose of this cross-sectional study is to investigate the relationship between test anxiety and educational performance of students. The subjects include 90 students chosen via random sampling from among the students of the School of Health and Nutrition, the Shiraz University of Medical Sciences. The data collection instruments include Sarason's test anxiety scale, demographic characteristics questionnaire (age, gender, major), and the students' grade point average (GPA). The questionnaires were administered to participants at final exams of the first semester of 2011-2012 academic year. Sarason anxiety scale (1980) is a short questionnaire that includes yes/no questions that measure mental states and psychological experiences of the subjects via "self-reporting." Scores below 12 indicate low anxiety; scores from 12 to 20

indicate moderate anxiety and scores higher than 20 indicate high anxiety. Information collected and entered into spss 19 software using descriptive analysis, Mann-Whitney ,correlations spearman and *t*-test analysis was performed.

RESULTS

In this study, 90 students from the Faculty of Health and Nutrition, the Shiraz University of Medical Sciences were studied. Based on the descriptive data, 54.2% of subjects were male, and 45.8% were female. The subjects' majors included 25.6% professional health, 22.1% environmental health, 23.3% public health, 26.7% nutrition and 2.3% other majors. 88.1 percent of the students were single, and 11.9% were married. 95.3% were undergraduate, and 4.7% were graduate students.

The students' GPA was 15.55 (standard deviation = 1.32).

The mean anxiety score of students was 12.39 ± 5.39. Among the students investigated, 56.7% had low anxiety, 32.2% had moderate anxiety, and 11.1% had high anxiety.

Spearman test was used to investigate the relationship between test anxiety and educational performance. The results showed that there was no significant relationship between test anxiety and educational performance ($P = 0.97$).

Using Kolmogorov–Smirnov test, the normality of distribution was evaluated and confirmed.

Independent *t*-tests showed that there was no statistically significant relationship between test anxiety and educational performance ($P = 0.97$), gender ($P = 0.12$), educational level ($P = 0.12$), and marital status ($P = 0.51$).

Findings of the study indicated a significant relationship between GPA and gender ($P = 0.002$) and marital status ($P = 0.05$) [Table 1].

Table 1: Comparisons of means of parameters calculated on the basis of factors under study

Parameter	Variable	Mean	Standard deviation	*t* value	*P* value
Test anxiety	Gender				
	Male	11.42	5.88	$t=-0/129.81$	$P=0/129$
	Female	13.45	6.12		
	Marital status				
	Single	12.15	6.12	$t=-1/35.82$	$P=0/510$
	Married	13.5	5.48		
	Education level				
	BA	12.67	6	$t=1/54.83$	$P=0/127$
	MA	8	2.31		
GPA	Gender				
	Male	15.14	1.33	$t=-3/15.77$	$P=/002$
	Female	16.04	1.17		
	Marital status				
	Single	15.62	1.3	$t=1/99.78$	$P=/05$
	Married	14.72	1.09		

GPA: Grade point average

Results indicate that high anxiety (13.2%) and moderate anxiety (36.8%) are more common in women than in men [Figure 1].

The results in Figure 2 demonstrate that people with high anxiety had higher GPA than the other two groups.

DISCUSSION

This study aims to determine the relationship between test anxiety and educational performance of students in Faculty of Health and Nutrition, the Shiraz University of Medical Sciences.

Based on the findings of the present study, the mean anxiety score of students was 12.39 ± 5.39. Among the students investigated, 56.7% had low anxiety, 32.2% had moderate anxiety and 11.1% had severe anxiety. This is consistent with results of Moaddeli and Hesamabadi (2004) study titled: "Assessment of anxiety level in students of Hazrat Fatima (SA) Nursing and Midwifery School." They found that 90.9% of students had low levels of anxiety, 7.4% had moderate anxiety, and 1.7% had high anxiety [4].
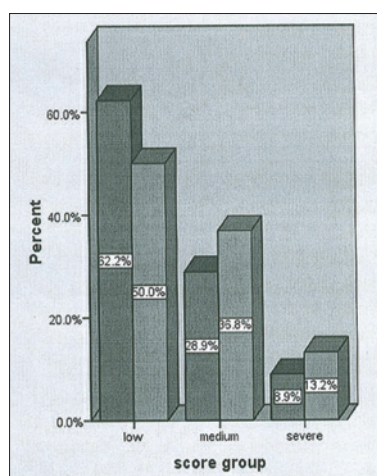

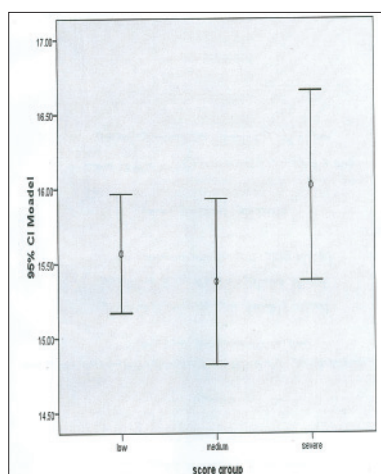**Figure 1:** Distribution of anxiety status by gender

Figure 2: Comparison of students' grade point average in terms of anxiety status

In a similar study by Cheraghian *et al.* entitled "study of the relationship between test anxiety and educational performance of nursing students" 48.7% of students had low levels of anxiety, 34% had moderate anxiety, and 3.3% had high anxiety [2] which is consistent with the results of this study.

The mean anxiety score of Cheraghian *et al.* was 23.2 ± 30.9 [2].

In a study by Clark *et al.* (1998), the majority of subjects had high levels of test anxiety [9]. As can be inferred from the results of the present study, the high and moderate levels of anxiety are higher than those of studies cited above. This difference may be due to several factors that have an impact on anxiety, such as different course contents, educational environment, test conditions, types of test questions and other factors.

Results of the study showed that there is no significant relationship between educational performance (GPA) and students' test anxiety ($P = 0.97$).

In a similar study by Cheraghian *et al.* entitled "study of the relationship between test anxiety and educational performance of nursing students" there was no significant relationship between test anxiety and educational performance of students [2] which is consistent with the results of this study. Jerrell and Ronald study demonstrated that "high levels of cognitive test anxiety were significantly associated with a decrease in test score and as a result, with academic performance reduction."[10] Owens *et al.* study demonstrated that "high levels of anxiety and depression are associated with poor academic performance." It was mentioned [11] in Hembree's study that test anxiety may also lead to poor performance in person [12]. Chapell's study showed a weak but significant correlation between test anxiety and GPA of students [13].

Lashkaripour *et al.* (2007) in the study entitled "the relationship between test anxiety and academic performance of secondary school students in Zahedan" found an inverse relationship between test anxiety and academic performance ($P = 0.003$) [5].

The difference between the results of this study with those of the abovementioned study can be because the subjects in the two studies were of different age groups. The differences between schools and university campuses, educational environment, teaching and evaluation methods, and systems of rewards and punishments resulting from test results play a role in this regard. The fear of rejection, being blamed by family and friends, motivation to enter university, and the competition between students are among other factors that increase anxiety and decrease educational performance.

The results of the present study indicated that there is no significant relationship between test anxiety and gender ($P = 0.12$); But the number of female subjects who had moderate and high level of test anxiety was higher than that of male subjects (13.2%, and 36.8%, respectively). The relationship between students' gender and GPA were significant ($P = 0.002$) so that the average GPA for female group was higher than for male group [Table 1].

Hatami and Ardalan study titled "assessment of the level of test anxiety in college students at the Kurdistan University of Medical Sciences and its association with certain demographic characteristics in the 2007-2008 school year" indicated that there is a significant relationship between gender and AD ($P > 0.05$) [3]. The results of this study are consistent with current research.

The results from the study of Hagh-Shenas *et al.* (2009) titled "reducing anxiety in a group of high school adolescents" indicated that boys and girls do not differ significantly in terms of anxiety scores [1]. According to tantaft, no significant relationship was observed between test anxiety level and gender [14]. The results of these two studies are consistent with current research.

Mehrabizadeh *et al.* (2000) in a study entitled "evaluation of test anxiety epidemiology and of its relationship with efficacy and intelligence" indicated that the epidemiology of test anxiety among female students was higher than among male ones (22 vs. 12.8) more [15] which is consistent with the current study.

Moaddeli and Hesamabadi (2004) study titled: "Assessment of anxiety level in students of Hazrat Fatima (SA) Nursing and Midwifery School" showed that there was a statistically significant difference between the level of test anxiety and gender ($P = 0.05$) [4].

Lashkaripour, *et al's*. (2005) study entitled "the relationship between test anxiety and academic performance of secondary school students in Zahedan" indicates a statistically significant relationship between gender and anxiety. The results of this study show that the frequency of test anxiety occurrence in female and male students is 48.2 and 35.2, respectively [5].

Research results show that although in many cases anxiety is considered a feminine feature and is more frequent in women than in men, in the areas of teaching and learning this feature cannot be treated as gender-specific [3].

The results of the present study indicated that there was no significant relationship between test anxiety and marital status ($P = 0.51$) but there was a significant relationship between marital status and GPA ($P = 0.05$), so that the GPA mean of a single group (15.62) was higher than that of married (14.72). This was inconsistent with results reported by Cheraghian *et al.* and Moaddeli and Hesamabadi who did not report a significant relationship between marital status and test anxiety [2,4].

However, with respect to $P = 0.05$ in the present study, the result is close to significant. Therefore, this lack of consistency is not so strong.

The results presented in this study showed that there was no significant relationship between the education level and test anxiety ($P = 0.12$).

The study by Cheraghian *et al.* also showed no significant relationship between test anxiety and education level (degree) [2]. This is consistent with the results of the present study.

However, in Hatami and Ardalan a significant correlation was reported between AD and education level. The anxiety was higher among AD students ($P < 0.05$) [3].

Considering that if anxiety is beyond the individual's capacity and abilities it can be harmful and contribute to the incidence of other mental disorders, the results of the high prevalence of test anxiety and its negative effects on individuals should be considered important and further studies should be performed for identifying its causes and aggravating factors. This can help improve comprehensive plans in the education systems in order to reduce anxiety and help students. Thus, the results of this study can be helpful for academic advisers and planners, developers of education systems, and mental health planners.

ACKNOWLEDGMENTS

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