Determining the Level of Test Anxiety and Some of Its Contributing Factors among the Freshmen Students

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Introduction

Anxiety and its related domains has been one of the widest fields of research over the past decades (Cheraghiyan et al, 2008). Anxiety is not an uncommon term. It includes a set of emotions such as fear which has always accompanied human beings and is considered the basis for most of the psychological problems (Tashakor, 1998). Almost everyone has confronted such a feeling throughout the course of life. It is not exaggerated if it is stated that every individual with any culture or at any age has experienced fear (Heravi et al, 2004). Learners at different educational systems experience great ranges of anxiety. Their anxiety is sometimes so excessive that disturbs their educational and daily performances. One of the most significant types of anxiety is “test anxiety” which has embraced great deals of research in the field of education (Oladipo et al, 2013; Yazdani et al, 2011; Trifoni et al, 2011; Hatami et al, 2010; Moadeli et al, 2005; Omidi et al, 2005). Unpleasant emotions, experiences or concerns when the ability to perform a task is evaluated, results in the reduction of coping abilities in different situations such as test taking and accordingly leads to test anxiety (Cheraghiyan et al, 2008). Test anxiety is considered a preoccupation of mind which accompanies self underestimation and doubts about personal abilities (Sarason, 1975). Most frequently, it leads to negative cognition, attention deficiency, improper physiological reactions and poor educational performance (Abolghasemi, 1999). Although this definition does not ignore the role of environmental and social factors, it focuses mainly on cognitive activities and considers them the primary cause of test anxiety (Alimohammadi, 1996). It is scientifically claimed that the complications of stress and test anxiety does not accidentally affect part of the stressed population, but all the people who are involved in test taking in a way. Everybody experiences the pressure and fear to some extent (Alimohammadi, 1996). The mental and physical health damage to manpower expert with the cost

Abstract

Test anxiety is considered one of the most important factors in every educational system that affects educational performance and achievement. Due to its significant role in learning, this descriptive cross-sectional study was conducted with an intention to determine the level of test anxiety and its influencing factors among the freshmen students at Hormozgan University of Medical Sciences. Therefore, 310 freshmen students were selected randomly who filled out a questionnaire about their demographic information in the first section and Sarason Scale in the second section. The data was analyzed using SPSS program version 16 and statistical tests such as Chi-square, Mann Whitney, Kruscal Wallis and Spearman correlation coefficient. The results detected that the mean score for test anxiety was 13± 6.06, representing that 47.85 of students suffered from low level of test anxiety, 40.3 from moderate level and 11.95 from severe level. The findings also indicated that the level of test anxiety had a significant correlation with sex and age, but no significant relationship with marital status, parents’ job and parents’ level of education. Considering all that, by effective planning and psychological interventions, negative effects of test anxiety on educational performance could be eliminated.

Key words: Test anxiety, freshmen students, medical students
savings and convenience is not justified by any reason (Sakineh Dadipour et al, 2012). These psychiatric disorders are considered as the most common weakening diseases (Seyed Reza Mirsoleymani et al, 2013). Almost everybody is aware of the fact that “tests” have become an inherent part of life. A lot of important decisions are made based on test results. Therefore, it is not surprising if test anxiety is a considerable issue worldwide (Trifoni et al, 2001). Annually, test anxiety affects millions of school and university students all over the world. Almost 10-30 % of all the students (Cheraghiyan et al, 2008; Tashakor, 2005) suffer from this type of anxiety which is also known as “debilitating test anxiety” (Lashkari et al, 2006; Abdol Ghasemi, 1999). This is one of the most frequent issues in educational environments and a primary concern of educational systems. (Cheraghiyan et al, 2008; Khosravi et al, 2008). According to some scholars, although school students are also involved with test anxiety, it is maximized during higher education. Different studies state that students of medicine, health, nursing and paramedical sciences are specifically under a lot of stress. Yet, results from other surveys on students of medical sciences claim that they suffer no more than students of other fields from debilitating test anxiety (Yazdani et al, 2011). Different studies suggest other types of disorders besides students’ social health or psychosis if they suffer from high levels of anxiety. They may include impacts on endocrine and exocrine glands, short term memory loss and cognitive errors (Afrooz, 1992), disrupting the immune system’s normal function (Mehrabizadeh et al, 2002), excessive perspiration (Abddolghasemi, 1999) alterations of biochemical agents in blood and providing risk factors for cardiovascular diseases (Samavat, 1994). Besides all the implications mentioned above, according to researchers in the field of education, the most significant concept about test anxiety that is worth considering, is its negative impact on educational performance. It is reported (Yazdani et al, 2011) that the students’ educational achievements deteriorate under the impact of test anxiety. Negative impacts of test anxiety on students’ educational performance have been documented by different studies (Oladipo et al, 2013; Farooqi et al, 2012; Rana et al, 2010; Cheraghiyan, 2008; MehrabizadehHonarmand et al, 2007; Lashkari et al, 2006; Tashakor, 1998; Alimohammadi, 1996; Amiri, 1996; Hoomand, 1994). Moreover, it is considered by some scholars the main predicting factor for educational achievement (Alimohammadi, 1996; Hoomand, 1994). This not only influences the learning programs, but also limits personal developments (Yazdani et al, 2011), and eventually public services. Disturbances due to improper educational performance and personal developments are irrefutable. According to all that went on, it is worth reconsidering test anxiety as a contributing factor in the concept of learning and bringing up qualified people. Detection and differentiation of students who suffer from test anxiety seem necessary in every educational system and specifically with regard to freshmen at universities. Program planners would also benefit from considering this issue by effective interventions. A study on students in higher education (Rana, 2010) revealed that the cognitive factor (anxiety) plays a more significant role compared with the emotional factor (excitement) when students sustain such type of anxiety. This study also concluded that effective intervention and informing the learners can help them manage their level of test anxiety. Due to the importance of effective intervention, this study was conducted on the freshmen at Hormozgan University of Medical Sciences with an intention of determining their level of test anxiety. Moreover, its potential correlation with some of the students’ demographic features was assessed. 

**Method**

This was a descriptive cross-sectional study that was conducted on the freshmen at Hormozgan University of Medical Sciences in Oct. 2012. The total number of students who had registered for the academic year of 2012-2013 was reported as 735 students. The participants’ sample size was determined based on the Cochran formula \( p=0.5 \) and \( q= 0.5 \). The participants were chosen randomly from the list of registered students. After excluding the ones who were not willing to participate, 310 students were left ultimately. A questionnaire containing two sections was designed for data collection. The first section included questions about the participants’ demographic features and the second section asked questions about their test anxiety experiences using Sarason test anxiety scale. Based on a self-report method, this scale evaluates the psychological and physiological states of a student through the course of an exam and even after that. It includes 37 True-False items. Items 1, 3, 15, 26 and 27 get a point if they are marked “False” and the rest of the items get points if they are marked “True”. The total grade obtained by the participants detects their level of test anxiety. The grades range between 0-37 and the cut-off points are as follow: 12 and bellow indicate low level of anxiety, 13-20 reveal moderate anxiety and above 20 severe anxiety (Yazdani et al, 2011; Lashkari et al, 2006). The questionnaire’s reliability and validity had been reported in previous studies (Hatami et al, 2010) and the reliability of the test was measured using Cronbach alpha (0.7). Due
to “empty value” for the items which had not been answered, average score of 0.5 was calculated for analysis of the questionnaire. All the information from the participants was kept confidential. All together 310 analyzable questionnaires were left ultimately. Descriptive statistics including frequency, percentage, mean and standard deviation were used to analyze the data. The analytical statistical methods such as Chi-square, Mann-Whitney, Kruscal Wallis and Spearman correlation coefficient were also applied. The data was analyzed using SPSS program version 16. For all the items, 0.05 was considered statistically significant.

**Results**

310 analyzable questionnaires were available which were filled out by the freshmen of the academic year 2012-2013 at Hormozgan University of Medical Sciences. The youngest participant was 17 and the oldest 45 years of age. The mean and standard deviation of their age was 3.21 and 19.96 respectively. 83.7% of the participants were between 17-20 years old, 11.5% between20-24 and 4.8% between25-45. The relative frequency of females was 33.2% (96 individuals) and for males was 66.8% (193 individuals). 81.3% (260 students) were single and 5.6% (18 students) married. Most of the participants (67.9%) studied for B.S degree, 2% for MA degree and 30.3% for PhD degree. 17.3% studied nursing, 5.5% dentistry, 8% midwifery, 4.7% radiology, 4% roentgen logy, 7.7% laboratory sciences, 7.7% anesthesiology, 7.3% operating room, 4.4% information technology, 2.6% public health, 2.2% environmental health, 0.04% entomology and 3.3% occupational health. Most of the participants’ fathers were employees (51%) and mothers were housewives (85%). Regarding the parents’ level of education, they had mostly studied at most up to high school (fathers 38% and mothers 43.5%). The mean ± standard deviation of the obtained grades from the questionnaires was 13.65 ± 6.06 which suggested that 11.9 % students (38 individuals) had severe test anxiety, 40.3% (129 individuals) suffered from moderate test anxiety and 47.8% (153 individuals) from low level of test anxiety. In fact, 52.5% of the participants suffered from a notable level of test anxiety. The link between sex and level of anxiety was calculated by Chi-square test and represented a statistically meaningful relationship (p= 0.03) table1.

| Table1. The link between sex and level of anxiety based on Chi-square test |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                | Low Level of    | Average Level of | High Level of   | Total Level of  | Total           |
|                | Test Anxiety    | Test Anxiety     | Test Anxiety    | Test Anxiety    |                 |
| Number of      | 81              | 86              | 26              | 193             | P=0.03          |
| Female Students|                 |                 |                 |                 |                 |
| Number of      | 56              | 32              | 8               | 96              |                 |
| Male Students  |                 |                 |                 |                 |                 |

In order to compare the grades obtained for test anxiety among students of different fields, neither Krusal-Wallis nor chi-square test represented a statistically significant difference (for both tests: p=0.09).Mann-Whitney U test was applied to compare the grades obtained between two groups of married and single. The results detected no statistically significant difference (p=0.556). In addition, Chi-square test results revealed no statistically notable relationship between different levels of test anxiety and age (p=0.167). Based on Mann-Whitney U test results, the level of test anxiety and parents’ occupation had no significant relationship (fathers’ job: p=0.816 and mothers’ job: p=0.276). Chi-square test results presented no significant relationship between different levels of anxiety either (fathers’ job: p=0.769 and for mothers’ job: p=0.162) table2.Fathers’ level of education (p=0.255) and mothers’ level of education (p=0.695) had no statistically important impact on students’ level of test anxiety.As for the item of age, Spearman correlation coefficient detected a statistically significant relationship (r=0.665, p=0).

| Table 2. The link between parents’ job and level of test anxiety |
|-----------------|-----------------|-----------------|-----------------|-----------------|
|                | Number | Mean | Total |
| Fathers’ job   | Businessman       | 123 | 124.91 | P=0.769 |
|                 | Employee          | 128 | 127.04 |                 |
| Mothers’ job   | Housewife         | 221 | 128.37 | P=0.162 |
|                 | Employee          | 39  | 142.56 |                 |
Discussion

The mean grade for test anxiety obtained in this study is the same as the findings of a previous study (Omidi et al, 2005). In a study, the relevance of test anxiety among medical and nonmedical students was evaluated in a city in Iran (Omidi et al, 2005) and it was concluded that 13.3% of the students suffer from test anxiety. Moreover, another study (Hatami et al, 2010) was also conducted in another city in Iran which evaluated the correlation between some demographic features and level of test anxiety. Their study concluded that 14.4% of the participants suffered from severe and high levels of test anxiety, 72.8% from average level and 12% were normal. A study (Cheraghiyan et al, 2008) on nursing students at Abadan University of Medical Sciences found out that 86% of the nursing students at this university suffered from low or average levels of test anxiety. Another finding (Moadeli et al, 2003) concluded that 90% of the students who had participated in the study at Shiraz nursing and midwifery school have little test anxiety. Yet, a study (Sahebalmazmani et al, 2001) conducted in another university of Medical Sciences, revealed high levels of test anxiety among the students. In a survey on test anxiety among the students of medical sciences in Belgrade (Latas et al, 2010), reported that the students mostly suffer from test anxiety. The difference between the findings in this regard may be partially due to the impact of various factors on anxiety. Hence, some scholars (Moadeli et al, 2003) consider different variables responsible for the prevalence of test anxiety among students such as lessons’ level of difficulty, design of exam questions and the condition of educational system. Although this explains much about the different findings of different studies, it must be taken into accounts that since most of the freshmen do not have previous academic experiences, a self-report assessment would not work properly to get an exact and objective report. It can be therefore added here that using different methods and instruments for the exact assessment of the level of test anxiety is worth considering.

The findings of this study detected a significant relationship between the sex of the participants and their level of test anxiety. This finding does not correspond with the results from some of the previous studies (Oladipo, 2013; Hatami et al, 2009; Bigdeli et al, 2008). A study (Farooqi et al, 2012) demonstrated no statistically significant difference between the levels of test anxiety in male students compared with female students of medicine in Pakistan. Yet, some other scholars report the higher prevalence of test anxiety among females (Latas et al, 2010; Akbarboorang et al, 2009; Lashkari et al, 2007; Nariman et al, 2006; Moadeli et al, 2004; Amir Mdjd et al, 2001; Moosavi et al, 1999; Ali Mohammadi, 1996; Hoomand, 1994). The same finding was recently reported as well (Ya-huei wang, 2013). It is probable that girls are convinced to accept anxiety as a female character and learn to give up when they are under stress while boys act defensively and consider anxiety a threat to their masculinity. A study (Farooqi et al, 2012) considers the traditional gender roles of females along with their duties in a patriarchal society responsible for their anxiety that leads to poor educational performance. This study also concluded that the discrepancies among males and females regarding test anxiety may be partially due to different social roles assigned to men and women as well as increased emotional vulnerability of women. Pakistan’s patriarchal society would be one of the main reasons for the inhibitions that women confront in higher education and specifically medical education. Insecurity and threats to self-esteem among girls explains the onset of such anxiety (Farooqi et al, 2012). Another study (AmiriMadjid et al, 2009) considers both environmental and genetic factors responsible for girls’ test anxiety. Lower levels of test anxiety among men would be partially due to the fact that they are less obsessive about educational and academic competition. They have higher desires for employment. The relationship between students’ test anxiety and their age was under investigation which represented a statistically significant link. Another study reported the same finding (Omidi et al 2005). Based on a study (Watson, 1998), the older the students, the less their level of test anxiety. However, in some studies (Oladipo, 2013; Yazdani, 2011; Hatami et al, 2010; Cheraghiyan et al, 2009; Moadeli, 2004) no significant relationship between age and test anxiety was detected. This discrepancy in the findings may be partially due to participants’ various conditions. The participants of the above mentioned studies were already university students and were not experiencing a totally unfamiliar environment. However, the participants of the present study were all freshmen who had just started academic education with quite novel experiences. In this regard, it is not strange if older participants report a higher level of anxiety since this is completely new to them and needs a lot of adjustments. This study evaluated the relationship between test anxiety and marital status as well which showed no statistically significant link. Yet, some other studies (Moadeli, 2004; Omidi et al, 1996) report a significant relationship between test anxiety and marital status. The findings from some other surveys (Yazdani, 2011; Cheraghiyan, 2008) are consistent with the present study. Due to limited number of married participants in this study, further investigations are recommended in this regard.
The participants’ parents’ job or educational degree had no impact on their anxiety level which is in accordance with a previous study (Moosavi, 2002). Yet, a survey (Ghazanfari et al, 2004) reported that the higher the fathers’ level of education, the more test anxiety students suffer from. As for the parents’ job, the findings were the same as the present study. Prevalence of anxiety was not different among students in different fields and levels of education which is the same as the results from some previous studies (Omidi, 2005; Moadeli et al, 2004). A survey (Cheraghiyan et al, 2009) reported no significant relationship between level of education and test anxiety. It was reported from a survey (Ya-huei Wang, 2013) that nursing students suffer from anxiety to a greater degree compared with other students of medical sciences. Apart from the potential effects of participants’ immediate mental and emotional states, probable lack of self-recognition or honesty might have affected this survey which is usual for any self-report study.

Questionnaire
Please answer the following questions. All the information will be kept confidentially.

Gender: Male Female
Marital status: Married single divorced
Field of Study:
Number of family members:
Father’s job:
Father’s level of education: PhD degree Masters degree Bachelors degree Associate degree High school diploma below high school diploma
Mother’s job:
Mother’s level of education: PhD degree Masters degree Bachelors degree Associate degree High school diploma below high school diploma

Test Anxiety Scale
How much test anxiety do you have? Without overthinking the answer, circle “True” or “False”. Give your first instinctive response.

1. While taking an important exam, I find myself thinking how much smarter the other students are than I am. True False
2. If I were to take an intelligence test, I would worry a great deal before taking it. True False
3. If I knew I was going to take an intelligence test, I would feel confident and relaxed. True False
4. While taking an important exam, I perspire a great deal. True False
5. During class exams, I find myself thinking of things unrelated to the actual course material. True False
6. When a surprise test is announced, I panic. True False
7. During a test, I find myself thinking of the consequences of failing. True False
8. After important tests, I am frequently so tense my stomach gets upset. True False
9. I freeze up on things like intelligence tests or final exams. True False
10. Getting good grades on one test doesn’t seem to increase my confidence on the second. True False
11. I sometimes feel my heart beating very fast during important exams. True False
12. After taking a test, I always feel I could have done better than I actually did. True False
13. I usually get depressed after a test. True False
14. I have an uneasy, upset feeling before taking a final examination. True False
15. When taking a test, my emotional feelings do not interfere with my performance. True False
16. During a course exam, I frequently get so nervous, I forget facts I really know. True False
17. I seem to defeat myself while working on important tests. True False
18. The harder I work at taking a test or studying for one, the more confused I get. True False
19. As soon as the exam is over, I try to stop worrying about it but I just can’t. True False
20. During exams, I sometimes wonder if I’ll ever get through school. True False
21. I would rather write a term paper than take an exam for my grade in a course. True False
22. I wish exams did not bother me so much. True False
23. I think I could do much better on tests if I could take them alone and not feel pressured by time limits. True False
24. Thinking about the grade I may get in a course interferes with my studying and performance on tests. True False
25. If exams could be done away with, I think I would actually learn more. True False

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26. On exams I take the attitude, “If I don’t know it now, there’s no point in worrying about it.” True  False
27. I really don’t see why some people get so upset about tests. True  False
28. Thoughts of doing poorly interfere with my performance on tests. True  False
29. I don’t study any harder for final exams than for the rest of my coursework. True  False
30. Even when I’m well prepared for a test, I feel very anxious about it. True  False
31. I don’t enjoy eating before an important test. True  False
32. Before an important exam, I find my hands or arms trembling. True  False
33. I seldom feel the need for “cramming” before an exam. True  False
34. The school should recognize that some students are more nervous than others about tests and that this affects their performance. True  False
35. It seems to me that exam periods should not be made such intense situations. True  False
36. I started feeling very uneasy just before getting back a test paper. True  False
37. I dread courses where the instructor has the habit of giving “pop” quizzes. True  False


Scoring the Test Anxiety Scale is: The total number of “True” answers is your test anxiety score. A score of 12 or below ranks in the low anxiety range. If that is your score, the chances are that you wouldn’t be extra stressed right now. A score of 12-20 ranks in the medium range. Any score above 20 signifies high test anxiety. Scoring 15 or greater is a good indication that you experience considerable discomfort about taking tests.

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