ORIGINAL ARTICLE

Anxiety Among Medical Students Studying Pre-Clinical Years of Medical Colleges of Karachi, Pakistan

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ABSTRACT

Objective: To assess the level of anxiety in medical students during their preclinical years.

Methods: A total number of 150 students were selected for this cross sectional study from various medical colleges of Karachi, during March to June 2016. The "Westside anxiety scale" questionnaire was used to measure the anxiety. Inferential statistics such as Independent t test and Chi square test were applied to compare the anxiety among male and female students and between the preclinical academic years of undergraduate medical program.

Results: Approximately 40% of the medical students were found to have high test anxiety and none of the student was in the comfortable anxiety level zone. A statistically significant mean difference (0.17, p-value=0.02) in the test anxiety score was observed for the academic years but no significant difference (0.04, p-value=0.63) in the anxiety level or score was present between male and female students

Conclusion: Our result suggests that anxiety level is high in the first year of preclinical medical sciences as compare to the year after with no discrimination with respect to gender. It is recommended that medical institutes should be aware of the high stress and anxiety among their students and should look for ways to overcome it. The data collected in this study was done on a small scale, therefore, more in depth research is required to explore it further.

Key words: Anxiety, Preclinical academic year, Westside anxiety scale, Medical students.

INTRODUCTION:

Anxiety and depression is getting very common in our population especially in urban setting[1]. Unlike other discipline's students, medical undergraduate students are under continuous extensive pressure to meet multiple day to day assignments and deadlines. Beside, these students are also under the impression that even a small mistake may seriously harm a patient as well risk their own careers. Small amount of stress or positive stress is useful and energizing people towards goal and motivates the quality of life while excessive stress have negative impact on person's health and job performances[2] and may be drastic and destructive[3] especially for students and may lead to anxiety, depression and decline in academic performance[4,5]. Academic behavior has played an important role in shaping the society. A number of studies have been made to find the relationship between anxiety and poor academic performances. Academic related stress being the most frequently reported source of anxiety and depression among the students[6].

The most common causes of anxiety among students is their perception of gaining extensive knowledge in a limited time period[7]. Along with this, financial difficulties, external

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pressures[8], getting good grades[9], frequent tests and quizzes, unclear assignments, excessive homework, uncomfortable class room[10] are some of the potential factors of academic related stressors. In addition to academic requirements, relationship with faculty members and time pressure may also be the major source of anxiety and stress[11]. This academic stress and anxiety can lead to physiological, physical or psychological distress and may be responsible for depression, nervous breakdown, heart disease[12] and even suicide[13].

The faculty of medical colleges are also under the impression that medical students are more anxious about their course of studies especially in the first year of their professional qualification, and are more highly test anxious. This high anxiety may have negative impact on the students' academic performance and quality of life. Therefore, the present study is aimed to assess the level of anxiety in medical students during their preclinical years.

METHODS:

A cross sectional study in which 150 undergraduate medical students from preclinical years of various medical colleges of Karachi were selected during the semester examination. A total of 500 questionnaires were given to preclinical students and they were asked to fill the Westside test anxiety scale questionnaire, only 150 students responded. Students with any known psychological illness or those who were on some antidepressants were excluded from this study. Data were entered and analyzed using the SPSS version 20. Pearson's chi-square test was used to assess the test anxiety level between male and female students studying in different preclinical years. Student's t-test was used for comparing the mean values of anxiety between academic year and gender. A p value of ≤ 0.05 was considered significant.

RESULTS:

Among the 150 medical students 37 (24.6%) were male and 113 (75.33%) were female. About 59 (39.3%) students have high test

anxiety and 58 (38.7%) have moderately high test anxiety. Only 22 (14.7%) students belonged to high normal test anxiety level, whereas, 11 (7.3%) students placed on the category of normal or average test anxiety. Fortunately, none of the students were in the zone of comfortable low anxiety zone, nor in the extremely high anxiety zone as shown in table 1.

Table 1: Level of Test Anxiety among Medical Students using Westside Anxiety Scale

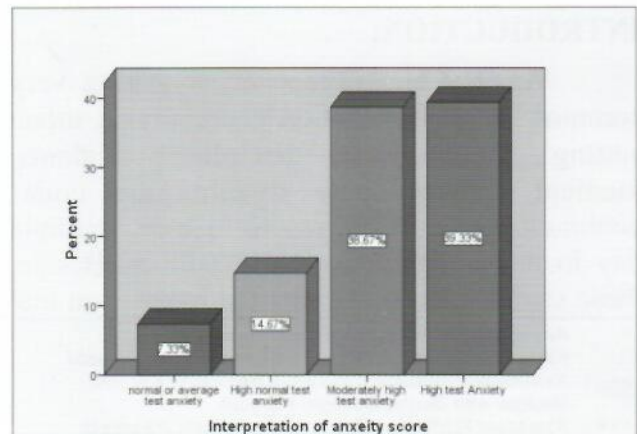| Level of Anxiety (Score Range)	Frequency	Percent
"Comfortable low test anxiety" (1.0-1.9)	0	0
"Normal or Average test anxiety" (2.0-2.5)	11	7.3
"High normal test anxiety" (2.5-2.9)	22	14.7
"Moderately high test anxiety" (3.0-3.4)	58	38.7
"High test Anxiety") (3.5-3.9)	59	39.3
"Extremely high test Anxiety" (4.0-5.0)	0	0
Total = n = 150	150	100.0

Interpretation of Anxeity Score

Fig 1: Level of Test Anxiety among Medical Student (n=150)

In Figure 1, it is evident that highest number of students belonged to the high test anxiety level category, whereas, least number of students belonged to normal or average test anxiety category.

Table 2: Comparison of Test Anxiety Score with respect to Gender and Academic Year

Variables		Mean (S.D)	95% C.I		P Value
			Lower Limit	Upper Limit	
Academic year of students	First year students (n=75)	3.54 (0.40)	0.026	0.305	0.02*
	Second year students (n=75)	3.37 (0.47)			
Gender of Students	Male Students (n=37)	3.43 (0.48)	-0.205	0.124	0.63
	Female Students (n=113)	3.47 (0.43)			

Test applied: Independent t-test, *p-value statistically signification

Table 3: Comparison of Test Anxiety Level with respect to Gender and Academic Year

Variables		Normal or Average Test Anxiety	High Normal Test Anxiety	Moderately High Test Anxiety	High Test Anxiety	P Value
Academic year of students	First year (75)	5	3	34	33	0.003*
	Second year (75)	6	19	24	26	
Gender of Students	Male (37)	5	3	15	14	0.254
	Female (113)	6	19	43	45	

Chi square test applied *P-value statistically signification

A comparative analysis of the students' anxiety level on the basis of academic year and gender was conducted through independent t test as shown in Table 2. This comparison showed that with 95% CI, first year students have a higher mean value 3.54 with a standard deviation of 0.40, for anxiety score as compared to the students of second year, which is 3.37, with a standard deviation of 0.47. This result had a p value of 0.02, which shows that the hypothesis is statistically significant. On the other hand, a gender comparison as depicted in Table 2, shows that female students have a higher mean value of anxiety score that is 3.47 with a standard deviation of 0.43, as compared to the mean value of anxiety level of male students, which is 3.43 with a standard deviation of 0.48. The value for this comparison is 0.63. As this value is greater than 0.05, the hypothesis is significantly insignificant.

Chi square test was conducted to have a detailed analysis of anxiety score on the basis of gender and academic year as shown in Table 3. Results show that majority of the first year students experienced moderately high test anxiety, whereas, majority of the second year students experienced high test anxiety. More second year students belonged to the normal and high normal test anxiety level. These results had a p value of

0.003, which justifies the hypothesis. Gender comparison as depicted in Table 3, showed that highest number of female students belonged to the high test anxiety level, whereas, highest number of male students belonged to moderately high test anxiety level. Results exhibit the fact that anxiety level is higher among the female students as compared to the male students. The p value for this comparison was 0.2, which nullifies the hypothesis.

DISCUSSION:

The present study performed a comparison of anxiety levels among students on the basis of academic year and gender. The results showed that first year students had higher anxiety levels as compared to the second year students. These findings are against the results of study performed by Rezazadeh et al which depicted that anxiety levels are not influenced by the number of years of study[14]. However, the results were in accordance with the results of the study conducted by Inam and Abdulghani et al, which showed that among medical students, the ones belonging to 1st year of study had highest anxiety levels for test[15,16].

The gender comparison shows that females have higher anxiety levels for test as compared to the male students. This result is also justified on the basis of previous studies[17,18]. Another study suggested that women are almost two times more prone to experience anxiety disorders as a result of external stimuli or trauma[19], whereas, in another study it was indicated that gender is the most important factor in determination of anxiety levels[20]. Many theories have suggested reasons to the higher level of anxiety among the women. The most reliable explanation exists in the psychological differences between the genders[18]. Moreover, men have more control over them and have better abilities to tackle stress situations as compared to the women[21]. On the other hand, biological factors such as intermittent release of estrogen have also been highlighted to manifest the higher anxiety levels in females[22]. The results of present study are partially in accordance with findings of Fiore et al, which proved that not only gender is responsible for anxiety differences, but

there are many other variables that play role in determination of anxiety levels among the students[23].

CONCLUSION:

Anxiety level is found to be high in the first year of preclinical medical sciences as compare to the year after with no discrimination with respect to gender. It is therefore important to understand the underlying causes behind this high anxiety and find ways to decrease the prevalence and intensity of stress and anxiety among students. It is also recommended that institutes should carry out screening of anxiety and stress for their students at regular basis and should also take help of a psychiatrist or a psychologist where needed for their students. The study was done on a small scale, therefore, more in depth research on large scale is required to explore it further.

REFERENCES:

1. Khan MS, Ahmed U, Adnan M, Khan MA, Bawany FI. Frequency of generalised anxiety disorder and associated factors in an urban settlement of Karachi. J Pak Med Assoc. 2013;63(11):1451-5.

2. Kakunje A. Stress among health care professionals-The need for resiliency. Online J Health Allied Sci. 2011;10(1). Available from http://www.ojhas.org/issue37/2011-1-1.htm

3. Manimaran S, Jeyakumar S, Lakshmi KB. An education management information system with simultaneous monitoring of stress stimulators for students Mental Health management. Technol Health Care. 2016; 24(6):889-97.

4. Dahlin M, Joneborg N, Runeson B. Stress and depression among medical students: A cross sectional study. Med Educ. 2005;39(6):594-604.

5. Alwani A, Kanpurwala MA, Noori S, Punjwani K. Frequency of Depression among School Going Adolescent Girls in Karachi, Pakistan. J Studies Management Planning. 2016;2(5):182-9.

6. Harvey L, Drew S, Smith M. The first-year experience: a review of literature for the Higher Education Academy. York: The Higher Education Academy. 2006. Available from; www.heacademy.ac.uk/4880.htm

7. Carveth JA, Gesse T, Moss N. Survival Strategies for Nurse?Midwifery Students J Nurse-Midwifery. 1996;41(1):50-4.

8. Andrews B, Wilding JM. The relation of depression and anxiety to life?stress and achievement in students. Br J Psychol. 2004;95(4):509-21.

9. Hirsch JK, Ellis JB. Differences in life stress and reasons for living among college suicide ideators and non-ideators. Coll Stud J. 1996;30:377-86.

10. Kohn JP, Frazer GH. An academic stress scale: Identification and rated importance of academic stressors. Psychological Reports. 1986;59:415-26..

11. Sgan-Cohen HD, Lowental U. Sources of stress among Israeli dental students. J Am Coll Health. 1988;36(6):317-21.

12. Quick JC, Quick JD, Nelson DL, Hurrell Jr JJ. Preventive stress management in organizations: American Psychological Association; Washington, DC, USA: 1997.

13. Richings J, Khara G, McDowell M. Suicide in young doctors. Br J Psychiatry. 1986;149(4): 475-8.

14. Rezazadeh M, Tavakoli M. Investigating the relationship among test anxiety, gender, academic achievement and years of study: A case of Iranian EFL university students. English Language Teaching. 2009;2(4):68-74.

15. Inam SB. Anxiety and depression among students of a medical college in Saudi Arabia. Inter J Health Sci. 2007;1(2):295.

16. Abdulghani HM, AlKanhal AA, Mahmoud ES, Ponnamperuma GG, Alfaris EA. Stress and its effects on medical students: a cross-sectional study at a college of medicine in Saudi Arabia. J Health Popul Nutr. 2011; 29(5):516-22.

17. Hosseini L, Khazali H. Comparing the Level of Anxiety in Male & Female School Students. Procedia-Social Behavior Sci. 2013;84:41-6.

18. 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 Educational Psychol. 2005;97(2):268.

19. de Graaf R, Bijl RV, Smit F, Vollebergh WA, Spijker J. Risk factors for 12-month comorbidity of mood, anxiety, and substance use disorders: findings from the Netherlands Mental Health Survey and Incidence Study. Am J Psychiatry. 2002;159(4):620-9.

20. Farooqi YN, Ghani R, Spielberger CD. Gender differences in test anxiety and academic performance of medical students. Int J Psychol Behavior Sci. 2012;2(2):38-43.

21. Huberty TJ. Test and performance anxiety. Principal leadership. 2009;10(1):12-6.

22. McLean CP, Asnaani A, Litz BT, Hofmann SG. Gender Differences in Anxiety Disorders: Prevalence, Course of Illness, Comorbidity and Burden of Illness. J Psychiatric Res. 2011:1027-35.

23. Fiore AM. Gender differences in test anxiety. Morgantown, West Virginia West Virginia University; 2003.