Original article:

Assessment of psychological stress in first year students of a private medical college

[1]DR RESHU GUPTA * , [2]DR ANKUR PUNIA, [3]DR SHIKHA MATHUR, 4DR RC GUPTA , [5]DR ABHISHEK KAWATRA, [6]DR KK VERMA

[1]Assistant Professor, Department Of Physiology, MGMC&H

[2]Final Year Resident, Department Of Medicine, MGMC&H

[3]Associate Professor, Department Of Physiology, MGMC&H

[4]Professor & Head, Department Of Physiology, MGMC&H

[5]Assistant Professor, S.P Medical College, Bikaner

[6]Professor & Head, Department of Psychiatry, S.P Medical College and Associated group of hospitals, Bikaner

*Correspondence Address - Email: reshugpt@gmail.com

ABSTRACT

Introduction: Present study was planned to determine the prevalence of anxiety among first year medical students at MG Medical College, Jaipur.

Methodology: A cross-sectional study was carried out at MG Medical College, Jaipur on 150 first year medical students who had spent more than 6 months in college and had no self reported physical illness. We assessed the students during a period without and during a period with examinations. Anthropometric and demographic variables of the students included age, gender, weight, height and BMI. Prevalence of anxiety was assessed using a structured validated questionnaire, The Hamilton Anxiety Scale (HAM-A) with a cut-off score for various levels of anxiety. They were subjected to the questionnaire both prior to and during the examination and data analysis was done using SPSS v.17.

Results: All 150 students completed the questionnaire. The mean age of the students was 18 years.   A low prevalence of anxiety amongst medical students was found. Male students were found to be more prone to anxiety than female students. There was no significant association between the prevalence of anxiety and examination period.

Conclusion: It was seen that medical students do not constitute a vulnerable group for the prevalence of anxiety as far as examination stress is concerned.

Keywords: examination stress, anxiety

INTRODUCTION

Everybody experiences anxiety from time to time. Sometimes it has a clear cause: examinations. Though this type of anxiety can be quite disruptive, it is transitory and disappears in short order. But the unpleasant feelings associated with anxiety can also have no apparent cause and can become a chronic condition. Examinations are part of every curricular activity. These are often tiresome and extremely stressful for students at any level of education.

Stressful feelings can alter the ability to think during examination. The sensation of having over-whelming nervousness can cause panic thoughts to the mind. This panic state causes the students to lose their ability to focus in exams. Preoccupation with stressful feelings would reduce the students' thinking and their ability (1). The emotional status of students during medical school training has been a source of concern, reports as early as 1956 (2). Medical students face several stressors at young

437

age making them more vulnerable to psychiatric disorders. Anxiety causes the physical effects like heart palpitations, muscle weakness and tension, fatigue, nausea, chest pain, shortness of breath, stomach ache or headaches. Anxiety also has some emotional effects over the individual who experiences it. The emotional effects include feeling of apprehension, trouble concentrating, feeling tense and anticipating the worst, irritability, restlessness, nightmares, obsessions about sensations etc (1). Anxiety also has some of the cognitive symptoms like racing thoughts, going blank, difficulty in concentrating, negative self talk, feeling of dread, comparing you to others and difficulty in organizing thoughts (3). Some studies have found little or no evidence of emotional distress among medical students (4); others have reported significant distress. Gender differences in distress have been found as well. The practical significance of higher levels of distress in females is unclear, given that women in general population tend to report more psychological distress. Medical education and training can contribute to the development of symptoms of anxiety that might lead to possible academic and professional consequences. We aimed to determine the prevalence of anxiety among first year medical students at MG Medical College, Jaipur.

METHODS

A cross-sectional study was carried out at MG Medical College, Jaipur. The instrument used to assess anxiety was a self administered question-naire being administered to 150 first year medical students who had spent more than 6 months in college and had no self reported physical illness. The purpose of the study was explained to the subjects and written consent was obtained thereof. Ethical clearance was obtained for the study. The anthropometric and demographic variables of the students included age, gender, weight, height and BMI. Height and weight of the subjects was measured with the help of height measuring scale and weighing machine. Body mass index was calculated to assess whether they are obese, underweight or normal. Prevalence of anxiety and depression was assessed using a structured validated questionnaire, The Hamilton Anxiety Scale (HAM-A) with a cut-off score for various levels of anxiety. They were subjected to the questionnaire both prior to and during the examination. The instrument was chosen as its validity is well established internationally and locally (5).

DATA ANALYSIS AND INTERPRETATION

Data collected by tests of anxiety were recorded and analyzed through the following statistical technique analysis using SPSS v.17.

Descriptive statistics

Frequency and percentage distribution was used to assess the demographic data. Mean and standard deviation was used to assess the examination anxiety amongst first year MBBS students.

Inferential statistics

Paired 't' test was used to compare pre and post test anxiety for statistical analysis.

Chi square was used to bring out the association between demographic variables.

438

RESULTS AND OBSERVATIONS

TABLE 1 : Hamilton Anxiety rating scale distribution of study participants before exams

Parameter	Grade 0	%	Grade 1	%	Grade 2	%	Grade 3	%	Grade 4	%
Anxious mood	70	46.7	56	37.3	21	14.0	3	2	0	0
Tension	50	33.3	70	46.7	17	11.3	11	7.3	2	1.3
Fear	83	55.3	51	34.0	11	7.3	5	3.3	0	0
Insomnia	111	74	27	18	4	2.7	8	5.3	0	0
Intellectual	83	55.3	48	32	14	9.3	4	2.7	1	0.7
Depressed mood	90	60	42	28	15	10	3	2	0	0
Somatic (muscular)	117	78	29	19.3	3	2	1	0.7	0	0
Somatic (sensory)	125	83.3	21	14	4	2.7	0	0	0	0
Cardiovascular symptoms	132	88	15	10	3	2	0	0	0	0
Respiratory symptoms	128	85.3	18	12	4	2.7	0	0	0	0
GI symptoms	121	80.7	25	16.7	3	2	1	0.7	0	0
Genitourinary symptoms	134	89.3	14	9.3	2	1.3	0	0	0	0
Autonomic symptoms	97	64.7	38	25.3	15	10.0	0	0	0	0
Behavior at interview	64	42.7	56	37.3	25	16.7	5	3.3	0	0

Perusal of table 1 shows the distribution of study participants under the 14 items of the Hamilton Anxiety scale which was administered before the period of examination of students. Each item was graded from a scale of 0 (not present) to 4 (very severe) as per the severity of symptoms of anxiety. For all the 14 items, a decline in the distribution of subjects was found from the symptom being not present to being very severe. 46.7% of the students did not complain of anxious moods, 37.3%, 14%, 2%, 0% complained of mild, moderate, severe and very severe symptoms of anxiety respectively. A similar decline was found for other items as well.

439

TABLE 2 : Hamilton Anxiety rating scale distribution of study participants during exams

Parameter	Grade 0	%	Grade 1	%	Grade 2	%	Grade 3	%	Grade 4	%
Anxious mood	77	51.3	49	32.7	20	13.3	2	1.3	2	1.3
Tension	61	40.7	52	34.7	31	20.7	4	2.7	2	1.3
Fear	87	58	43	28.7	13	8.7	5	3.3	2	1.3
Insomnia	96	64	41	27.3	12	8	0	0	1	0.7
Intellectual	86	57.3	48	32	12	8	4	2.7	0	0
Depressed mood	90	60	36	24	20	13.3	4	2.7	0	0
Somatic (muscular)	117	78	28	18.7	3	2	1	0.7	1	0.7
Somatic (sensory)	123	82	21	14	6	4	0	0	0	0
Cardiovascular symptoms	125	83.3	19	12.7	5	3.3	1	0.7	0	0
Respiratory symptoms	129	86	14	9.3	6	4	0	0	1	0.7
GI symptoms	125	83.3	18	12	5	3.3	2	1.3	0	0
Genitourinary symptoms	137	91.3	10	6.7	1	0.7	2	1.3	0	0
Autonomic symptoms	102	68	37	24.7	8	5.3	3	2.0	0	0
Behavior at interview	76	50.7	50	33.3	20	13.3	4	2.7	0	0

[Table 2 shows the distribution of study participants under the 14 items of the Hamilton Anxiety scale which was administered during the period of examination of students. The analysis showed that there was a decline in the distribution of subjects from the symptom being not present to being very severe for all the 14 items of the scale.]

TABLE 3 : Comparison of mean score of Hamilton Anxiety rating scale of participants before and during exams

Parameter	Mean score before	Mean score during	t test	P value
Anxious mood	0.72	0.68	0.49	0.62
Tension	0.98	0.9	1.13	0.25
Fear	0.58	0.62	0.31	0.75
Insomnia	0.39	0.46	1.07	0.28
Intellectual	0.62	0.56	0.94	0.34
Depressed mood	0.54	0.58	0.62	0.53
Somatic (muscular)	0.25	0.27	0.42	0.66
Somatic (sensory)	0.19	0.22	0.63	0.52
Cardiovascular symptoms	0.15	0.21	1.13	0.25
Respiratory symptoms	0.18	0.20	0.28	0.77
GI symptoms	0.22	0.22	0.00	0.99
Genitourinary symptoms	0.12	0.12	0.00	0.99
Autonomic symptoms	0.45	0.41	0.52	0.60
Behavior at interview	0.82	0.68	2.04	0.04##

[On application of 't' test, none of the parameters of the anxiety scale showed any statistical association.]

TABLE 4 : Gender based Hamilton Anxiety rating score of study participants

	Before exams (n=150)		During Exams (n=150)	
	Boys	Girls	Boys	Girls
Mild	86 (57.33%)	58 (38.66%)	85 (56.66%)	59 (39.33%)
Mild to moderate	1 (0.66%)	3 (2%)	3 (2%)	1 (0.66%)
Moderate to severe	1 (0.66%)	1 (0.66%)	0	2 (1.33%)
Total	88 (58.66%)	62 (41.33%)	88 (58.66%)	62 (41.33%)

[There was a preponderance of boys representing various symptoms of mild anxiety both before and during the exam whereas girls predominated boys in mild anxiety before the exam and a reverse pattern was observed during the examination period. The girls had a greater percentage as compared to boys for severe anxiety during the examination period.]

441

DISCUSSION

This study did not confirm the general impression that there is considerable amount of stress in first year medical students during exams. This was surprising as first MBBS is generally thought to be a stressful year. Quite similar results were observed in a descriptive study that was conducted on examination anxiety among 50 students of a recognized school in Coimbatore. The result showed that 40% of the students were with the moderate levels of examination anxiety, 36% of the students were with the low levels of examination anxiety and 24% with the severe levels of examination anxiety (6). Our study was in contrast with various other studies that have shown that constant pressure and untreated emotional problems are associated with various negative complications including development of adulthood anxiety, depression and behavioural disorders (7)(8)(9)(10). These studies suggest that the current educational process may have an inadvertent negative effect on students' mental health with high frequency of depression, anxiety and stress among medical students.

There was no statistically significant difference in the stress on the basis of gender although the girls had a greater percentage as compared to boys for severe anxiety during the examination period. The role of socialization practices that encourage women to express their emotions and men to suppress their emotions including anxiety can be implicated in an attempt to explain these cross-cultural trends.

Academic achievement is more important than other factors in inducing stress in medical students. A number of studies found no difference in anxiety among male and female medical students at the start of medical school but greater increases in distress among female students through the course of training (11)(12)(13). This finding suggests that the differences observed by gender in several studies may have other origins and warrant further investigation. However, few studies reported on differences in anxiety by gender (11)(14).

CONCLUSION

In conclusion, this study did not find a substantial number of medical students in the study sample with high anxiety scores, indicating emotional disorders. Therefore, in our study, examination seems not to constitute a stressor which otherwise is thought to be a significant contributor to examination related stress. Fighting the exam stress is an easy task if the individual can learn to relax and avoid over exaggerating and magnifying the importance to such a degree that it becomes almost impossible for the students to handle examination.

Currently available information is insufficient to draw firm conclusions on the causes and consequences of student distress because the study lacks generalization on account of sample being recruited from a single medical college. Large, prospective, hypothesis driven multicenter studies are needed to identify personal and medical training-related features that influence anxiety among students.

References :

1. Senthil kavitha R, Sasikala G. Effectiveness of guided imagery in reducing students examination anxiety. Nightingale Nursing Times 2011; 7(6): 57-59.
2. Saslow G. Psychiatric problems of medical students. J Med Educ. 1956; 31: 27-33.
3. www.cedu.niu.edu, Test Anxiety Anyone from www.google.com

442

4. Caring for your anxious teen. American Academy Of Paediatrics; 2003 from www.addthis.com.

5. Maier W, Buller R, Philipp M, Heuser I. The Hamilton Anxiety Scale: reliability, validity and sensitivity to change in anxiety and depressive disorders. J Affect Disord. 1988 Jan-Feb; 14(1):61-68.

6. Ponnusamy A. Examination Anxiety. Journal of School Social Work 2005; 4 (2): 24-30.

7. Eller T, Aluoja A, Vasar V, Veldi M. Symptoms of anxiety and depression in Estonian medical students with sleep problems. Depression and Anxiety 2006; 23(4): 250–256.

8. Dahlin M, Joneborg N, Runeson B. Stress and depression among medical students: a cross-sectional study. Med Educ 2005; 39:594-604.

9. Zaid Z A, Chan S C, Ho J J .Emotional disorders among medical students in a Malaysian private medical school. Singapore Med J 2007; 48 (10): 895.

10. Medical students are at risk of psychological distress. Student BMJ 2011; 19: d3678.

11. Vitaliano PP, Maiuro RD, Russo J, Mitchell ES. Medical student distress: a longitudinal study. J Nerv Ment Dis. 1989; 177: 70–76.

12. Gender differences in medical student distress: contributions of prior socialization and current role-related stress. Soc Sci Med. 1990; 30: 777–87.

13. Lloyd C, Gartrell NK. Sex differences in medical student mental health. Am J Psychiatry. 1981; 138: 1346–51.

14. Lloyd C, Gartrell NK. Psychiatric symptoms in medical students. Compr Psychiatry 1984; 25: 552–65.