

PREVALENCE, CAUSES AND PATTERNS OF ANXIETY TOWARDS EXAMINATIONS AND ATTITUDE TOWARDS COPING: A STUDY AMONG MEDICAL STUDENTS

Mohammad Munaim Tassadaq¹, Muhammed Naseem¹, Mehnaz Zafar²

1. Ras Al-Khaimah Medical and Health Sciences University, Ras Al-Khaimah, UNITED ARAB EMIRATES

2. Department of Psychiatry, Ras Al-Khaimah Medical and Health Sciences University, Ras Al-Khaimah, UNITED ARAB EMIRATES

ABSTRACT

Aims: The objective of this study is to assess symptoms of test anxiety among medical students and its association with various academic, social and health-related factors. The specific aims are to determine: the prevalence of symptoms of test anxiety, the factors responsible for and different patterns of test anxiety, the correlation of socio-demographic data with test anxiety in medical students and the attitude towards coping strategies developed by them to deal with test anxiety.

Methods: A sample size of 200 medical students meeting the inclusion criteria and giving consent was chosen from all professional years from the Ras Al-Khaimah Medical and Health Sciences University. The tools used were Visual Analogue Scale indicating severity of anxiety, Test Anxiety Inventory, and a self-designed questionnaire to correlate the various predisposing factors.

Results: Results showed 45.5% of the students felt severe examination-related anxiety. Female gender, peer pressure, insufficient sleep, mealtime irregularity, inability to concentrate, concern about previous examination results, perception of the course load as heavy and interpersonal issues were found to be correlated with the severity of examination-related anxiety.

Conclusion: Examination-related anxiety has a great impact on medical students, often leading to maladaptive behaviors which may have a negative effect on both examination performance and long-term mental and physical health. We recommend that students receive counseling to cope with this anxiety.

Keywords: Test anxiety scale, medical students, relaxation techniques, anxiety, stress

INTRODUCTION

Medical students suffer from stress quite often during their transition from high school to medical school (1). They find it difficult to maintain schedules for meals, sleep and recreational activities (2), with the most important responsible stressors being named as academic factors and examination pressure. They have also been shown to neglect their mental health (3, 4).

Test anxiety is a situation-specific trait which demonstrates the degree to which different individuals find examinations threatening. It can have significant negative effects on students, such as cognitive (task-irrelevant self-deprecating thoughts), psychosomatic (headaches and gastric disturbances) and behavioural effects

(procrastination and poor study skills) (5).

The objective of this study is to assess symptoms of anxiety related to examinations among medical students and its association with various academic, social and health-related factors. The hypothesis is that test anxiety occurs commonly among medical students in association with various predisposing factors and manifestations with its coping strategies being under-recognized.

MATERIAL AND METHODS

A sample of medical students meeting the inclusion criteria and giving consent was chosen from all professional years of the Ras Al-Khaimah Medical and Health Sciences University, to take part in this descriptive study.

The final sample size was 123 students. The study was carried out from March to May 2016.

The used tools were Visual Analogue Scale (VAS), which is used in research to assess subjective states like anxiety and pain; Test Anxiety Inventory, a standardized self-report psychometric scale which was developed to measure individual differences in test anxiety as a situation-specific trait; thus a self-designed questionnaire to correlate the various predisposing factors and manifestations with test anxiety. These factors and manifestations included year of study, age, gender, physical and psychological symptoms, smoking, caffeine consumption, sleep and mealtime regularity, physical and leisure activities, individual perception of the course load and deadlines, peer pressure, concern over previous exam results, negative effects of parental expectations and interpersonal, financial issues, physical illness and awareness of practice of anxiety-reducing techniques.

Results were recorded. Correlation of severity of test anxiety with variables was performed using the Pearson correlation coefficient, from which p-values were derived. $P < 0.05$ was considered to be statistically significant.

RESULTS

Of the 123 participants included in the study, 82 (66.7%) of them were female and 41 (33.3%) were male. 22 (17.8%) first years, 25 (20.3%) second years, 25 (20.3%) third years, 25 (20.3%) fourth years, and 26 (21.1%) fifth years made up the study population. The participants were between the ages of 18 and 24.

Out of all, 45.5% of the students stated that they felt severe examination-related anxiety, 43.9% had moderate anxiety, 8.1% had mild anxiety and 2.5% stated that they did not experience examination-related anxiety. 84 (79.2%) participants experienced symptoms for a few hours, 17 (16.0%) for a few days and 5 (4.72%) for over a week.

Subsequently, we analyzed the manifestations of these symptoms. 26 (24.5%) participants had psychological features related to examinations. Among these symptoms, the most common ones were feelings of frustration, followed by irritability, mood swings and nervousness. 39 (31.7%) participants had physical symptoms related to examinations, which were listed as headaches, acne and gastrointestinal disturbances.

Out of all participants 7 of them were smokers. Out

of these, 5 (71.4%) felt that they smoked more during examination periods, with 4 of them stating that they often smoked more, while 1 stated that they sometimes smoked more. 77 (70.3%) stated that they consumed more caffeine (coffee or tea) during examination periods. 43 (35%) did this often, and 44 (35.7%) did it sometimes.

Participants were also asked about their lifestyle during examination periods. The responses are summarized in Table 1.

Table 1: Students' lifestyles during examination periods

Question	Often	Sometimes	Never
Do you get sufficient sleep during examination periods?	21 (17%)	51 (41.5%)	51 (41.5%)
Do you have regular mealtimes during examination periods?	36 (29.3%)	58 (47.2%)	29 (23.6%)
Do you make time for leisure activities during examination periods?	15 (12.2%)	63 (51.2%)	45 (36.6%)
Do you make time for physical activities during examination periods?	11 (8.9%)	32 (52%)	72 (58.53%)

As shown in Figure 1, 72 (58.53%) students often perceived the course load as heavy during examination periods; 42 (34.14%) sometimes, and 9 (7.31%) of them never perceived it as heavy. 48 (39.02%) students had the perception of insufficient preparation during examination periods; 70 (56.7%) sometimes, and 5 (4.06%) never had the perception of insufficient preparation. 37 (30.09%) participants often felt of peer pressure during examination periods; 50 (40.65%) sometimes and 36 (29.26%) never felt peer pressure. 53 (43.09%) participant had the perception of many deadlines during examination periods; 58 (47.15%) sometimes, and 12 (9.75%) never had the perception of deadlines. 15 (30.61%) participants felt worried about previous exam results during examination periods; 31 (63.27%) sometimes, and 3 (6.12%) never felt worried about previous exam results. 29 (23.58%) students felt lack of concentration during exams; 70 (56.9%) sometimes, and 24 (19.51%) never felt lack of concentration. 34 (27.64%) participants felt negatively affected by parental expectations; 55 (44.71%) sometimes, and 34 (27.64%) never felt negatively affected by parental expectations. 24 repondent (19.51%) felt negatively affected by financial issues; 48 (39.02%) sometimes, and 51 (41.47%) never felt negatively affected by financial issues. 26 students (21.13%) felt negatively affected by interpersonal issues; 49 (39.83%) sometimes, and 48 (39.02%) never felt negatively affected by interpersonal issues. 28 (22.77%) participants felt negatively affected by physical illness; 52

(42.27%) sometimes, and 43 (34.96%) never felt negatively affected by physical illness. 39 (31.70%) participants were aware of anxiety-reducing techniques (examples listed by them included breathing deeply, entertainment, relaxation techniques, meditation, exercise, and positive thinking); 84 (68.3%) were not. A lower proportion of participants, 28 (22.77%) implemented anxiety-reducing techniques; 95 (77.23%) did not.

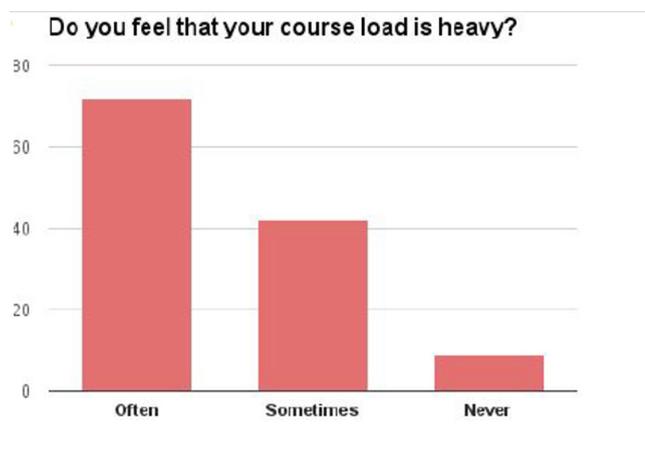
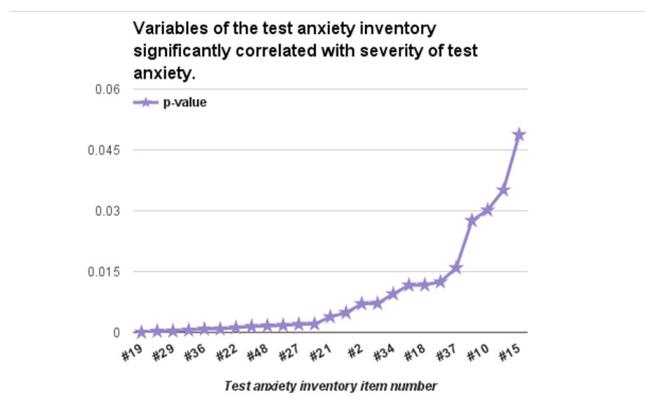


Figure 1: Students' perceptions of course load

Correlation of the self-designed questionnaire with VAS revealed a number of significant relations. The first was that frequency of symptoms was positively correlated with severity of examination-related anxiety ($p < 0.00001$). Other factors correlated with severity included female gender ($p = 0.001$), a feeling of peer pressure ($p = 0.002$), lack of concentration ($p = 0.002$), insufficient sleep ($p = 0.002$), negative effects of interpersonal issues ($p = 0.03$), worrying about previous examination results ($p = 0.03$), perceiving the course load as heavy ($p < 0.04$), and mealtime irregularity ($p = 0.04$).

Visual Analogue Scale was also correlated with the test anxiety inventory in order to find significant relations. These relations are summarized in Figure 1.



- 19. I cannot relax physically before a test.
- 44. I wish test evaluators could recognize that some individuals are more nervous than others in taking tests, and that this fact could be taken into account when test results are evaluated.
- 29. I start feeling very anxious or uneasy just before getting test results.
- 50. During tests I sometimes get so nervous I forget facts I really know.
- 36. When taking a test, my emotional feelings interfere with my concentration.
- 43. I often feel physically panic-stricken when I have to take a really important test.
- 22. I have a hollow, uneasy feeling before taking a test.
- 40. I do not feel confident and mentally relaxed before a test.
- 48. I think I would do much better on tests if I could take them alone and/or not feel pressured by a time limit.
- 12. Having to face an important test disturbs my sleep.
- 27. My stomach becomes upset before important tests.
- 20. I mentally freeze up on important tests.
- 21. Room noise (those coming from lights, heating/cooling systems, other test takers, etc.) bother me.
- 3. People (family, friends, etc.) are counting on me to do well.
- 2. Getting a good score on one test does not seem to increase my confidence on other tests.
- 31. If I do not do well on this test, I guess it will mean I am not as smart as I thought I was.
- 34. I often find my fingers tapping or my legs jiggling while I am taking a test.
- 41. My friends will be disappointed in me if my score is low.
- 18. I never seem to be fully prepared to take tests.
- 25. If I score low, I am not going to tell anyone exactly what my score was.
- 37. The harder I work on some test items, the more confused I get.
- 11. Worrying about how well I will do interferes with my preparation and performance on tests.
- 10. Even though I don't always think about it, I am concerned about how others will see me if I do poorly.
- 1. I wish there were some way to succeed without taking tests.
- 15. Knowing that my future depends on doing well in tests upsets me.

Figure 2: Correlation between variables of the test anxiety inventory and the severity of test anxiety

DISCUSSION

It has been shown that high levels of anxiety, related to examinations, are associated with autonomic nervous system activation, worry and task-irrelevant thinking that may actually interfere with performance instead of motivating students to perform well (6).

Anxiety related to examinations was highly prevalent among the medical students surveyed, regardless of their stage of study; this is consistent with the study conducted by Dave et al (4). However, our result showed that the anxiety was most commonly of high severity, in contrast with their study, which found 57% of students to have intermediate anxiety, and 43% to have higher anxiety (2). The severity of anxiety was related to various predisposing factors and manifestations. These included female gender (which contradicts the result from

the study conducted by Firth (7)), peer pressure, lack of concentration, insufficient sleep, mealtime irregularity, interpersonal issues, worry about previous examination results, and perception of the course load as heavy. Awareness of coping strategies was low, and their adoption was yet lower.

Some students did not agree to participate in the study, which may have altered the results. The results were also self-reported; therefore, there was no objective validation of test anxiety.

The alpha-chronbachs value for the variant of the test anxiety inventory used has not been calculated; however, in similar inventories it ranges from 0.84 to 0.91.

The authors plan to conduct a second, related study. This would, as above, counsel students on examination-related anxiety and coping with it; following this, the study would be carried out again to compare the results of these interventions. It would also correlate the predisposing factors, manifestations, and severity of anxiety with objective examination results, and with physical features (for example, increased heart rate and blood pressure readings around important examination periods). Finally, we would aim to consult the students regarding their personal perspectives on what they feel has contributed to their examination-related anxiety.

Consequently we found out that the severity of examination-related anxiety has a great impact on medical students. Although a degree of stress can be an impetus for intensive preparation, the manifestations found in the results are indicative of maladaptive behaviour that may have a negative effect on both examination performance and long-term mental and physical health. These serious consequences should not be viewed as immutable components of medical education. Accordingly, we recommend that medical students receive counselling on examination-related anxiety, including demystification of the concept and information on anxiety-reducing techniques and lifestyle modifications, in order to deal with examinations more easily.

Ethics Committee Approval: This study was approved by Scientific Researches Ethics Committee of Ras Al-Khaimah Medical and Health Sciences University.

Informed Consent: Written informed consent was obtained from the participants of this study.

Conflict of Interest: The authors declared no conflict of interest.

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