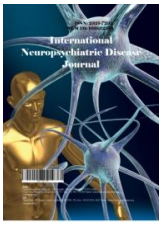

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Evaluation of the Examination Stress among the First Year MBBS Students in the Medical College

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

Background and Aim: The objectives were to determine the effect of examination stress explored by self-evaluation questionnaire, correlation of examination stress and impact of examination stress on the academic performance.
Materials and Methods: A prospective cohort study was conducted on medical students to determine the examination stress explored by anxiety questionnaire, biochemical parameter and autonomic function tests. Fifty medical students studying in first academic year admitted for the first year were included in the study. Information about demographic, social, cultural, and life-style factors were collected using a proforma of questionnaire. Name, age, sex and nativity were also recorded. Stress was explored during first terminal examination since it was the first major examination faced by the students after entering into the professional course. One parameter was used to measure the level of stress; Spielberger State Trait Anxiety Inventory (STAI) self-evaluation questionnaire to measure the level of stress.
Results: Anxiety levels dropped in post- examination period. In contrast abnormal autonomic functions did not decrease during post- examination period. In male and female students expected pattern of raised anxiety during examination and dropped anxiety scores in post- examination were observed.
Conclusion: The results of this study should help understand the pattern of response to the examination stress and enable development of strategies that will assist the students to handle the stress in a more efficient manner.

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Keywords: Anxiety; evaluation; examination sress; medical students; questionnaire, STAI.

1. INTRODUCTION

The stress system is essential for individual and species survival. Normal stress system function is crucial for maintenance of mental and physical survival. Dysregulation of stress system entails pathophysiology. Indeed stress fully pervades our life and influences us as individuals, communities, and humanity. The human body reacts to stress by activating a complex repertoire of behavioral and physiologic responses [1,2].

There is general agreement that adolescence is a challenging period of life, during which significant physical, psychological and social changes take place [3]. The adolescents are in a chronic state of threatened homeostasis and their adaptive responses are crucial for a successful adulthood.

Dysregulation in adolescence, could be the reason behind the emergence of a number of disorders [4]. Selye stated that all states of stress are not noxious. Eustress is the one mild brief and controllable states of challenged homeostasis, perceived as pleasant positive stimuli to emotional, intellectual growth and development. Distress is one which is severe uncontrollable physical and psychological challenge [5].

There is increasing awareness of stresses involved in medical training. Medical students are frequently described as stressed in comparison with general population. Particularly examinations are a major cause of stress [6]. High level of stress may have adverse effect on academic achievement. However there is a deficit of information regarding the interrelationship of stress and academic performance in medical students [7].

The present study adds to the literature of the level of stress during examination and its impact on performance in a cohort of first year medical students. The study also discusses, the areas where medical students are more stressful, effects of stress, student's adaptation styles, and intervention measures to deal with stress, as it is believed that healthy medical students are likely to become healthy doctors who can then be model and promote healthy lifestyles with their patients [4].

2. MATERIALS AND METHODS

A prospective cohort study was conducted on medical students studying at Gujarat Adani Institute of Medical Science, Bhuj, Kutch, Gujarat to determine the examination stress explored by anxiety questionnaire, biochemical parameter and autonomic function tests. Fifty medical students studying in first academic year admitted for the first year were included in the study.

2.1 Sample Size

The total strength of 1st year Medical students was 150. Using a random number table, 50 students were selected. Thus systematic randomly selected Cohort of 40 1st year Medical students was the sample for the study underwent evaluation at three intervals as follows:

1. Midterm: Pre examination: one month before terminal examination
2. During the first terminal examination - interval between essay paper and practical examination: Examination
3. One month after the first terminal examination: Post examination

2.1.1 Inclusion criteria

All healthy 1st year medical students who were mentally and physically fit, studying in the 1st academic term were included in the study.

2.1.2 Exclusion criteria

Students with any illness fever or on drug treatment were excluded from the study.

2.2 Methods

A written informed consent was obtained from the participants. Information about demographic, social, cultural, and life-style factors were collected using a proforma of questionnaire. Name, age, sex and nativity were also recorded.

Stress was explored during first terminal examination since it was the first major examination faced by the students after entering into the professional course. One parameter was used to measure the level of stress; Spielberger State Trait Anxiety Inventory (STAI) self-

evaluation questionnaire to measure the level of stress [6].

2.2.1 STAI self evaluation questionnaire

Spielberger State Trait Anxiety Inventory (STAI) self-evaluation questionnaire was used to measure the level of stress. The STAI inventory comprises of separate self-report scales for measuring two distinct anxiety concepts: anxiety state (A-state) and anxiety trait (A-Trait). "State" items require him to report how he/she feels at this moment, while the "Trait" items ask the respondent to indicate how he/she generally feels. Each section of the inventory comprises of 20 items.

2.2.2 Administration of questionnaire

The participant has no time limit for responding to the questionnaire. However, students generally require only six to eight minutes completing either section or less than fifteen minutes to complete both.

2.2.3 Scoring

Participants respond to each STAI item by rating themselves on a four point scale. Hence, the range of possible scores varies from a minimum of 20 to a maximum of 80 on both the A-State and A-Trait subscales.
The students were subdivided into two groups based on STAI state anxiety scores with those scoring ≤ 40 considered as low anxiety group while those with a score of > 40 were considered as high anxiety group.

3. RESULTS

Present study was conducted in the Medical College, on first year medical students on three occasions during the academic year to determine the effects of examination stress on academic performance.

Pre- examination readings were considered as baseline values. The study participants included 25 boys and 25 girls. The data for the group (n=50) were averaged and expressed as mean ± standard deviation. Means were compared between groups at three different times and within the groups, and correlated with other parameters and performance during the examination.

STAI scores raised from baseline to examination and dropped in post-examination period from examination. Statistically significant dropped (P=<0.05) state anxiety scores from examination to post-examination was observed. Trait score changes on three different periods were not statistically significant (Table 1).

Both boys and girls showed the same pattern of raised anxiety scores from baseline to examinations and dropped STAI scores during post-examination. However in girls dropped STAI scores during post-examination was statistically significant (P=<0.05) (Table 2).

4. DISCUSSION

In recent years the concern about stress during tenure of undergraduate medical training has increased. Various published literatures have documented high levels of distress among undergraduate medical students. Stress observed following a stressful stimulus depends on the nature of the stimulus. University examinations are a kind of summative examinations, known to be associated with higher stress compared to the formative examinations conducted periodically [8,9].

Table 1. Comparison of STAI state and trait anxiety scores on three intervals

STAI	Pre-Examination	Examination	Post-Examination
State	41 ±12	48.10 ±15.10	34.59 ±2.56*
Trai	42.14 ±10.23	49 ±8	40.21 ±7.91

** indicts statistically significance at p≤0.05*

Table 2. STAI score comparison in boys and girls on three different intervals

	Pre-Examination	Examination	Post-Examination
Boys (n = 20)	39.10 ±8.40	41.20 ±8.45	36.45 ±5.60
Girls (n = 12)	32.32 ±8.04	41.30 ±12.12	33.20 ±4.23*

** indicts statistically significance at p≤0.05*

To measure the level of stress STAI anxiety scale was used, as many investigators have used it previously, and considered it as validated instrument.

In the study it was noticed that anxiety scores were elevated from baseline to examination and significantly dropped during post examination period from examination. These findings were consistent with reports of C.B. Arndt. Trait anxiety was correlated with development of distress is observed by S. M. Stewart.

At baseline it was observed that boys and girls showed similar pattern of raised anxiety during examination. Many studies support this part of the study; suggest no sex difference with regard to anxiety and stress. They also found no sex difference with regard to the development of anxiety and depression [10,11,12].

In the present study it was observed that higher the anxiety dropped the examination performance. The negative association between anxiety and performance was observed by the previous study, which noticed that high anxiety scores are likely to impair performance.

The results of this study should help understand the pattern of response to the examination stress and enable development of strategies that will assist the students to handle the stress in a more efficient manner. The strategies could be the one, which enable the students to face the examination or to raise the number of formative tests that will give feedback to the students and guide them to improve deficiencies in learning. The medical students always try to struggle hard to achieve their goals and this may lead to time constraints for self, family, friends and entertainment.

5. CONCLUSION

In consort with previous research, the examinations in first year medical students are stressful enough to affect the performance adversely. Since stress around examinations is strongly predicting the academic achievement, students should be exposed to stress management techniques to help prevent the known high consequences.

Continued follow up of this cohort can provide information regarding changing response to stress and can help medical teachers understand more about stress among their students and guide them to improve in academic context which is important for student achievement.

CONSENT

A written informed consent was obtained from the participants.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Author has declared that no competing interests exist.

REFERENCES

1. Kudachi PS. Cohort study to determine the effect of examination stress explored by biochemical parameter and autonomic function tests, on the academic performance of first year medical students of j. N. Medical college, Belgaum; 2006.
2. Tone EB, Garn CL, Pine DS. Anxiety regulation: A developmental psychopathology perspective. Develop mental psychopathology. 2016;1-34.
3. Arnett JJ. Emerging adulthood: A theory of development from the late teens through the twenties. American psychologist. 2000; 55:469.
4. Stratakis CA, Chrousos GP: Neuroendocrinology and pathophysiology of the stress system. Annals of the New York Academy of Sciences. 1995;771: 1-18.
5. Selye H. The stress of life; 1956.
6. Saipanish R. Stress among medical students in a Thai medical school. Medical Teacher. 2003;25:502-6.
7. Petrides KV, Frederickson N, Furnham A. The role of trait emotional intelligence in academic performance and deviant behavior at school. Personality and individual differences. 2004;36:277-93.
8. Sharma M, Sharma M, Mathur K, Oiha K, Deora D: A study of stress and autonomic function test in medical students. Journal of Evolution of Medical and Dental Sciences. 2014;3:1672-81.
9. Papageorgi I, Hallam S, Welch GF. A conceptual framework for understanding musical performance anxiety. Research

Studies in Music Education. 2007;28:83-107.

10. Mishra BN, Gupta MK, Shukla SK. A comparative evaluation of stress factors indifferent groups in rural areas of Loni, Pravaranagar and PIMS. Pravara Medical Review. 2008;3(4):10-14.
11. Funkenstein DH. The learning and personal development of medical students and the recent changes in universities and medical school. J Med Educ. 1968;43: 883-897.
12. Linn BS, Zeppa R. Stress in junior medical students: Relationship to personality and performance. 1985;59:7-12. Bazmi Inam SN. Anxiety and depression among students of a medical college in Saudi Arabia. International Journal of Health Sciences, Qassim University. 2007;1(2): 295-300.

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