

Influence of personality on academic stress among first year MBBS students in medical college, Kolar- a cross sectional study

Ms. Krithika Sakthivel¹, Dr. Ruth Sneha Chandrakumar^{2*}, Dr Mohan Reddy M³

ABSTRACT

Background: The milieu of medical education has always been considered a stressful setting to students. Maladaptive personality traits like neuroticism are related with increased exposure to stressful life events and certain to form individuals susceptible in experiencing negative emotion and frustration. **Methodology:** This descriptive cross-sectional study was carried out among the first year medical undergraduates at Sri Devaraj URS Medical College, Tamaka, Kolar. Data was collected using the Eyesenck Personality Questionnaire to assess the personality dimensions and Medical Student Stress Questionnaire to assess the levels of academic stress. **Results:** When comparing the overall stress levels of students, 44(45%) scored 55-81 indicating mild to moderate stress levels and 29(30%) scored more than 81 indicating high stress levels. Female students had more stress than the male students and this difference was statistically significant ($p=0.004$). The most common stressors identified in our study were feeling tired after a tight schedule from 8:30am to 4:30pm and difficulty in covering portions daily. The least common stressor was failure in the first sessional examination. 13.31% scored high on neuroticism which had a negative impact on the academic performance. There was a positive relationship between those who scored high on extraversion (11.92%) and their academic performance. **Conclusions:** Stress among medical students is moderate to high. Early identification of the factors causing stressors may be helpful in preventing future illness among medical students. The study may provide better insights to the academic administrators for reducing the intensity of academic stress.

Keywords: *Personality; Academic Stress; Medical Students*

Stress is a physical response towards an unpleasant stimulus which can generate temporary discomfort and may also lead to future consequences if not resolved. Scientific information confirms the idea that personality traits are an important factor in identifying, responding and approaching stress events. (1) Being in medical school has always been regarded as highly stressful. Excessive stress causes physical and mental health problems. Persistent stress can impair students' academic achievement and personal or professional development.(2) Studies have reported an association of excessive stress level with lowered medical students' self-

¹MBBS student, Sri Devaraj URS Medical College, Kolar, Karnataka, India

²Assistant Professor, Department of Psychiatry, Sri Devaraj URS Medical College, Kolar, Karnataka, India

³Professor and HOD, Department of Psychiatry, Sri Devaraj URS Medical College, Kolar, Karnataka, India

*[Responding Author](#)

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esteem (3, 4) .They have also found that excessive stress is related to anxiety and depression (5, 6) difficulties in solving interpersonal conflicts (7) sleeping disorders (8,9) increased alcohol and drug consumption (10- 12) cynicism, decreased attention, reduced concentration and academic dishonesty (13) It is also associated with inhibition of academic growth and personal development.(3) Medical students may, as a result, feel inadequate and unsatisfied with their career as a medical practitioner in the future.(14) Stress was also found to decrease the quality of attention, concentration, decision-making, and reduces the students' abilities to establish good relationships with patients. [6] Personality traits are preparations for thinking or acting in a similar style in response to a variety of different stimuli or situations. (15) Maladaptive personality traits (neuroticism) are related with increased exposure to stressful life events and likely to make individuals susceptible in experiencing negative emotion and frustration. (16) Adaptive personality traits were less affected by daily stresses. (17) Some personality traits and their coping styles maybe a risk factor in stressful situations. Hence this study was conducted with the aim of identifying these vulnerable personalities and helping them to develop positive coping strategies so as to improve their academic performance.

METHODOLOGY

Study type:

Cross sectional study.

Study population:

The current study is a cross-sectional study done on students of 1st MBBS in Medical College, Kolar. In the current analysis, we used data from 99 out of 122 students enrolled in 2017-2018 batch of MBBS who consented to be a part of this project. The study was carried out from June 2018 to August 2018. A written informed consent was collected from all participants before administering the questionnaires. The current study protocol was approved by the Institutional Ethics committee. After assuring to individuals about the confidentiality of the information, data on personality dimensions and stress levels was collected by Eyesenck Personality Questionnaire-Revised and Medical Student Stress Questionnaire respectively. Coping methods used by individuals were collected through a separately administered form.

Inclusion Criteria:

1. First year MBBS undergraduates who gave informed consent.

Exclusion Criteria:

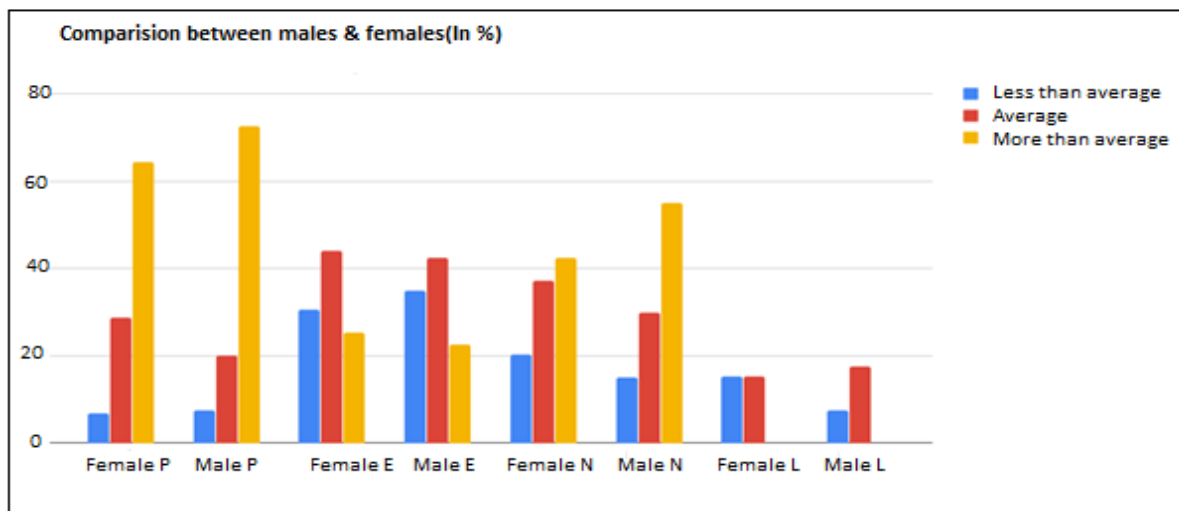
1. Those who did not provide consent to the study.
2. Those who gave incomplete forms.

Analysis: The obtained data was analyzed using IBM SPSS software version 22.

RESULTS

Out of the total 99 participants, 59 were female and 40 were male.

Personality Dimensions



Graph 1. Comparison of scores obtained by males and females where P- Psychoticism, E- Extraversion, N- Neuroticism, L- Lie Score

According to the Eyesenck Personality Questionnaire, as indicated in graph 1, males scored higher on psychoticism scale than females (72.5% as compared to 64.4%) Males scored less than females in more than average strength of Extroversion scale. (22.5% as compared to 25.4%) Males scored higher on more than average strength of neuroticism scale than females (55% as compared to 42.5%) Females are Less conforming than males (30.5% do not conform as compared to 25%) As seen in Table 1, the maladaptive personality traits of psychoticism and neuroticism had a negative impact on the final exam scores of the students and this was statistically significant. ($p < 0.01$). There was a positive relationship between those who scored high on extraversion (11.92%) and their academic performance.

Table 1: Correlation between academic performance and personality traits

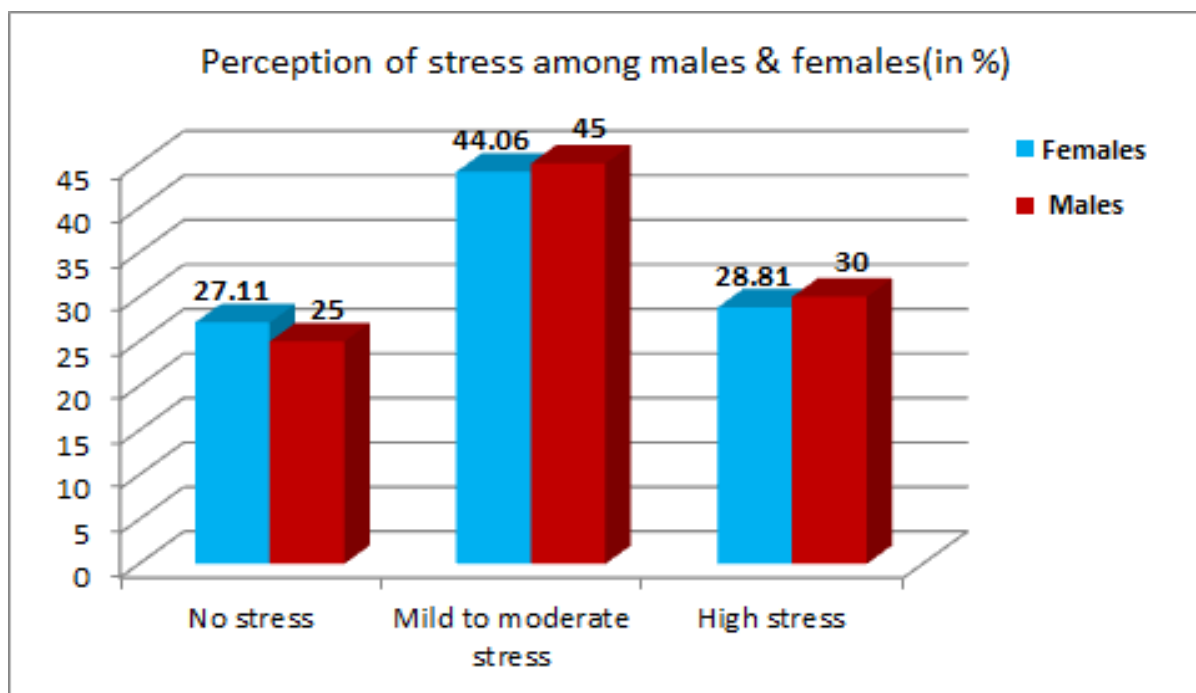
Personality Dimensions	Final Exam Scores
Neuroticism	0.721*
Extraversion	0.039
Psychoticism	0.358*
Lie score	0.027

* $P < 0.01$

Stress and Associated Factors

When comparing the overall stress levels of students, 26(25%) students scored less than or equal to 54 indicating no stress. Forty four students (45%) scored 55-81 indicating mild to moderate stress levels. Twenty nine students (30%) scored more than 81 indicating high stress levels.

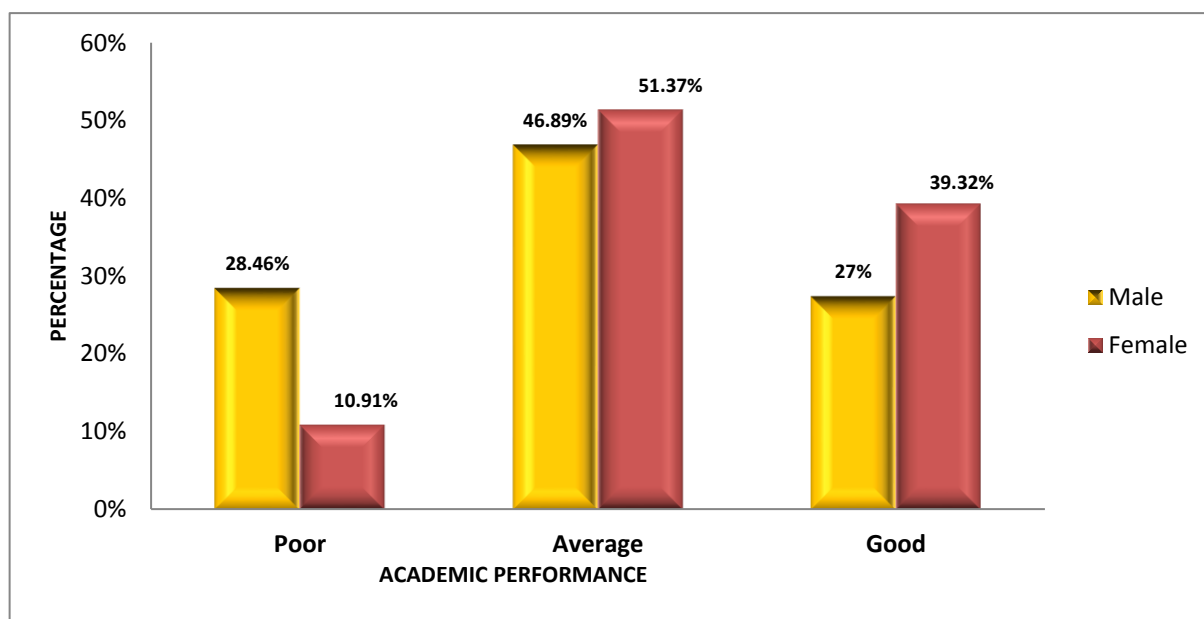
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Graph 2. Comparison of stress and gender

As shown in Graph 2, male students had more academic stress than the female students and this difference was statistically significant ($p=0.004$).

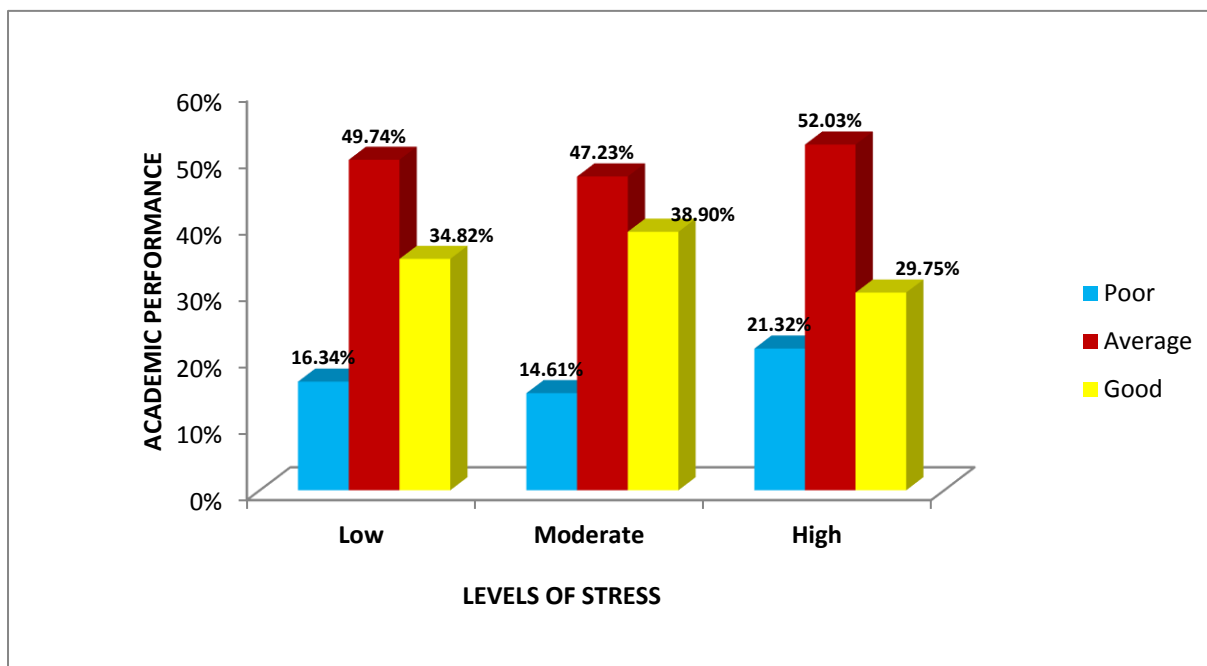
The source of stressors in the first year of the MBBS course as per the Medical students stress questionnaire (MSSQ) was studied. The most common stressors identified in our study were increased workload towards examination, vast syllabus and needing more self-study. The least common stressors were fear of failure in the first sessional examination and continuous dissection for three hours.



Graph 3: Comparison of gender and academic performance

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When we compared the academic performance of the students with their gender, we found that the males performed poorly in their final exams, whereas the females were average to good performers as shown in Graph 3.

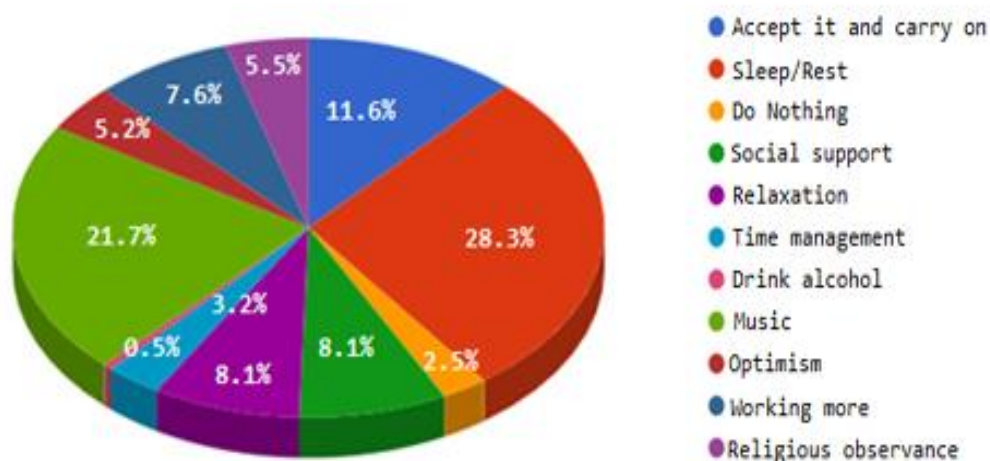


Graph 4: Comparison of stress and academic performance

As shown in graph 4, the academic performance was compared with the levels of stress. We found that those with higher levels of stress had an average to poor performance whereas those with low levels of stress had a good performance in their final exams.

Coping Mechanisms

Each student was asked to choose the coping mechanisms they most commonly used to deal with their stress. Given below are the coping mechanisms employed by the students.



Pie Chart-1. Coping mechanisms used by students.

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Out of the different coping mechanisms, most of the students preferred to sleep/rest when stressed (28.3%), listen to music (21.7%) or accept it and carry on(11.56%) Other coping methods include seeking social support, relaxation and working more. Only one response was registered for a negative coping mechanism which is consumption of alcohol (0.5%).

DISCUSSION

The findings of our study show that the prevalence of stress among medical students is high which is consistent with several other studies. A study done among medical students in Mysore by Kumar et al showed the prevalence of stress as 33.7% and among these students, 52.9% experience moderate and above level of stress.(18) In another study done in Kolkata by Gupta et al they found the prevalence of moderate and high stress among the participants to be 55.7% and 35.4% respectively and the overall prevalence of stress was estimated as 91.1%.(19) The most common stressors identified in our study were increased workload towards examination, vast syllabus and needing more self-study. In a study done by Singh RK et al, fear of failure, vast amount of content that has to be mastered, inability to cope with the high expectations of parents and peers were found to be the most commonly observed sources of stress.(20) In a study done in Pakistan, they found that University students' academic performance is affected by stress mainly by two main sources including course load and social support.(21) A study done by Siraj et al among medical undergraduates, showed a number of academic related stressors that included test and examinations, a big range of content to be learnt, lack of time to do the revision, poor marks, having self-expectations to do well, insufficient skill in medical practice, falling behind in reading schedule, heavy workload, difficulty in understanding the content, and inability to answer teachers' questions.(22) Early diagnosis as well as identification of the stressor can help prevent future illnesses among medical students.(23)

Several studies have shown that psychoticism and neuroticism have a negative impact on the academic performance. In our study also, maladaptive personality traits of psychoticism and neuroticism had a negative impact on the final exam scores of the students. Ciorbea et al found that psychoticism is negatively associated with academic performance. Negative relationship between psychoticism and academic performance is definitely explainable because psychoticism refers to less adaptive behavior. Psychoticism negatively affects responsibility and interest for studying and thus, it is detrimental to academic results.(24) Results from a study done by Premuzic et al suggest that Neuroticism may impair academic performance, while Conscientiousness may lead to higher academic achievement.(25) A study done in students of Hungary used Big Five Personality Questionnaire and concluded that Emotional stability/Neuroticism had direct effect on psychopathological outcome. Conscientiousness and Extraversion were also strong predictors of the same. (26) In our study those who scored high on the extraversion scale had a better academic performance. The personality trait referred to as conscientiousness has been found to be a big predictor of performance in medical studies. Additional traits concerning sociability i.e. extraversion, openness, self-esteem and neuroticism have been identified to be also relevant particularly within the applied medical environment. (27) In our study, neuroticism was found to be associated with perception of higher levels of stress, which is similar to findings from other studies. (16) Surprisingly different from other studies is the fact that males scored higher on stress scores than females in our study. This could be attributed to the fact that they also scored higher on the maladaptive personality traits. In a study done among medical students in Nagpur, they found that female students perceived more stress levels than their male counterparts. (28) Several other studies have also revealed higher levels of stress in female

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students. (22,29,30) In a study done on Malaysian Medical students, the academic/non-academic stressors were more commonly seen among male medical students as per Johari et al.(31) Medical students have used various coping mechanisms to deal with stress. However, developing coping mechanisms like positive interpretation and social support can enable students to reciprocate in a manner that results in adaptation. (13) In our study, most of the students preferred to sleep/rest as a coping mechanism when stressed.

CONCLUSION

Stress among medical students is moderate to high. Early identification of the factors causing stressors may be helpful in preventing future illness among medical students. The study may provide better insights to the academic administrators for reducing the intensity of academic stress. Support systems like preventive mental health services, stress management programs and other recreational facilities. Hence the preparation of medical students should include a personal optimization and development program.

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Conflict of Interest

The author declared no conflict of interest.

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