
Original Article

A study on stress levels among exam going post graduate medical students of a medical college in Telangana- A cross sectional study

Misha Gorantla

Assistant Professor, Department of Community Medicine, Malla Reddy Institute of Medical Sciences, Suraram, Hyderabad

Corresponding author

Received: 24-06-2017

Dr Misha Gorantla

Accepted: 27-09-2017

Email: misha.gorantla@gmail.com

Abstract:

Background: Medicine is considered to be a stressful profession particularly during post graduate years. Stress is also linked to various diseases such as Hypertension and Diabetes etc. Hence, understanding stress is important.

Objectives: to study the prevalence of stress among final year post graduate students using a screening instrument and to study the association of stress with certain academic and socio demographic characteristics.

Methods: This is a cross sectional study done on all final year post graduate students of all specialties covering both M.D and diploma candidates who are willing to participate in the study. A total of 71 study subjects were chosen. It was conducted in Kamineni Institute of medical sciences, Nalgonda district from 15th August 2013-10th January 2014. Kessler 10-item psychological distress scale (K10), a 10 item questionnaire was used to collect data regarding stress.

Results: The mean Kessler score obtained for the study population was 25 with a standard deviation of 6.74. This falls under the category of moderate stress according to Kesslers scoring. No statistically significant association was found between stress and gender, type of specialty, degree/ diploma. Marriage is found to significantly lower stress levels.

Conclusion: Study shows that stress among post graduate medical students is high. No statistically significant association was found between stress and gender, type of specialty, degree/ diploma.

Keywords- Stress, Post graduate medical students

Introduction:

Stress can be defined as any challenge to homeostasis, or to the body's internal sense of balance.¹ It can manifest either as eustress or as distress.² Eustress or good stress, is a positive form of stress that motivates an individual to continue working.² When this stress is no longer manageable, distress or bad stress manifests.² In today's competitive and demanding times, stress is becoming a universal phenomenon and vital stress managing tools such as strong interpersonal bonds and leisure is increasing diminishing. Stress is also linked to various diseases such as early onset of Hypertension and Diabetes. In addition, Excessive stress results in an increased prevalence of psychological problems like depression, anxiety, substance abuse and suicide ideation.³

What can be done about stress? The University of Georgia's University Health Center offers an online resource entitled Managing Stress: A Guide for College Students. It offers modules on several specific topics, such as sleep, healthy relationships, and time-management.⁴ In addition, practice of relaxation techniques such as meditation and breathing

exercises can help in significantly lowering stress and strengthening coping mechanism.

In addition to coping with the normal stressors of everyday life, medical students must deal with stressors specific to medical school. These include information and input overload, financial indebtedness, lack of leisure time, and pressures of work, etc. Postgraduate medical training has always been regarded as a highly stressful environment to students. While there are a number of studies on stress among medical undergraduates, there are very few on post graduates. It is important to identify the prevalence of stress in order to introduce remedial measures into the schedule of students to help them cope with stress. The present study attempts to study the prevalence of stress among final year post graduate students using a screening instrument and to study the association of stress with certain academic and socio demographic characteristics.

Methodology:

This is a Cross sectional study done on all final year post graduate students of all specialties covering both M.D and

diploma candidates who are willing to participate in the study. A total of 71 study subjects were chosen (n=71). This study was conducted in Kamineni Institute of medical sciences, Nalgonda district from 15th August 2013-10th January 2014. Sample collection was done between 1st and 30th of September 2013 using Kessler 10-item psychological distress scale (K10) developed by Kessler et al,⁵ designed to measure current (1-month) distress in population surveys. It comprises of 10 questions of the form: how often in the past month did you feel and offers specific symptoms such as tired out for no good reason, nervous and sad or depressed. The 5 possible responses range from none of the time to all of the time and are scored from 1 to 5 and then summed to give a total maximum score of 50. The cut-off scores used were those recommended by the authors: < 20 no stress; 20–24 mild stress; 25–29 moderate stress; 30–50 severe stress. Ethical clearance was taken from the institutional ethical committee. After prior telephonic introduction, the study subjects were approached at their own chosen time of convenience. Nature of the study was explained in detail and informed consent was taken. Care was taken to ensure that no participant was due to take any examinations in the month following the study. Absolute privacy and a mental comfort zone were maintained for each individual student while answering the questionnaire.

Upon completion of the questionnaire, each participant was requested to drop their questionnaire in separate drop-boxes. After collection of data, it was entered into Microsoft excel sheet and was analyzed using SPSS version 19, relevant tests were applied. Data is presented in the form of tables, pie charts and bar diagrams.

Results:

The study was conducted on a total of 71 students which consisted of 35 (49.3%) males and 36 (51.7%) females. Among them 23 (65.71%) males and 23 (63.89%) females were married.

Table 1- Distribution of study subjects based on their Kessler score (n=71)

Kessler score	Number	%
< 20 (no stress)	15	21.1
20-24 (mild stress)	20	28.2
25-29 (moderate stress)	17	23.9
30 and above (severe stress)	19	26.8
Total	71	100

Majority of study subjects belong to mild stress category in Kessler score. Followed by severe stress, moderate stress and no stress. The mean Kessler score was 24.94 with a standard deviation of 6.74

Table 2: Relationship between stress and gender (n=71)

Sex	Mild stress		Moderate stress		Total		Odds ratio (95% CI)
	Number	%	Number	%	Number	%	
Male	21	29.6	14	19.7	35	49.3	2.36 (0.9-6.1)
Female	14	19.7	22	30.9	36	50.7	
Total	35	49.3	36	50.7	71	100	

It was found that males were 2.36 times more likely to have no/mild stress compared to females. But this association was not statistically significant. p= 0.075

Table 3: Relationship between stress levels and type of specialty (n=71)

Specialty	Mild stress		Moderate stress		Total		Odds ratio (95% CI)
	Number	%	Number	%	Number	%	
Medical	16	22.5	15	21.1	31	43.7	1.55 (0.5-4.4)
Surgical	8	11.3	5	7.1	13	18.3	
Total	35	49.3	36	50.7	71	100	

When compared to non clinical specialties, medical specialties were 1.55 times and surgical specialties were 2.32 times more likely to have stress. However, no statistically significant association was found between stress levels and type of specialty

Table 4- Relationship between stress and marital status (n=71)

Marital status	Mild stress	Moderate/severe stress	Total	Odds ratio (95% CI)
Married	26	20	46	3.34 (1.2-9.6)
Unmarried	7	18	25	
Total	33	38	71	

Stress was found to be 3.34 times lower among married students as compared to unmarried students and this association was statistically significant (p=0.024)

Stress was highest among students of the department of obstetrics and gynecology with a mean Kessler score of 30.2 i.e., severe stress. Lowest stress was found in students of

pharmacology with a mean Kessler score of 19.7, i.e., no stress. Mean Kessler score among students of community medicine was 21.67, i.e., mild stress

Discussion:

Medical students are expected to learn and master a huge amount of knowledge, attitudes and skills for which they have to work hard which in turn puts them under a lot of stress. Studies of medical students from Saudi Arabia, Malaysia, Thailand identified a high frequency of stress.^{6,7,8} Our study showed that the study population had moderate stress. The mean Kessler score of the study population was 25 with a standard deviation of 6.74. This falls under the moderate stress category as per Kessler scale. This finding is in agreement with a study done by Anjali N Shete et al⁹ in Aurangabad where the post graduate study population showed moderate stress. A study done by Abdulghani HM et al⁶ in Saudi Arabia found that the total prevalence of stress was 63%, and the prevalence of severe stress was 25% among under graduate medical students in Saudi Arabia. This study also used the K 10 questionnaire similar to our study. A study done by Mannapur B et al⁷ in Karnataka found that 42.63% of the study subjects were found to have experienced less/moderate stress and 47.01% of them had experienced severe stress. The study instrument used was Presumptive Stressful Life Events Scale [PSLES]. A study done by Mostafa Amr et al⁸ in Egypt found that Stressors were reported by 94.5% of the total sample with equal gender proportions. This indicates that medical field is stressful and interventions to control and manage stress need to be adopted in the curriculum. Techniques such as yoga, meditation, encouraging sports and other hobbies are known to significantly reduce stress. In addition to this, a psychiatrists access and advice must be provided to students to seek help and to discuss coping mechanisms in a friendly and non judgmental environment. This will also help in early detection of stress and prevents progress into severe forms thus preventing unfortunate incidences such as suicides that are on the raise especially among student populations. It will also improve quality of life of the students which will also result in improved academic performance.

Our study showed no significant correlation for the gender difference. This was in agreement with study done by Anjali N Shete et al⁹ and Salam et al¹⁰ which also found no association between gender and stress. Study done by Mostafa Amr et al⁸ in Egypt found that female students reported a slightly higher level of perceived stress (23.8%) compared to males (17.1%). However, this difference was not statistically significant on both univariate and multivariate analysis.

Our study showed no statistically significant relationship between type of specialty and stress. However, studies done by Anjali N Shete et al⁹ found that clinical specialties were more stressful compared to non clinical specialties. This was attributed to a new level of responsibility, increased workload in addition to education and patient care activities. Lack of sleep during night duties can play a role to enhance this stress. However, no such relationship was found in our study.

This study found that married students were 3.34 times at lower risk of developing stress compared to unmarried students. This relationship was found to be statistically significant. This finding is in agreement with study done by Brian Chin et al¹¹ which found that the stress hormone, cortisol, was lower among married individuals of the study population. Over three non-consecutive days, the researchers collected saliva samples from 572 healthy adults aged 21-55. Multiple samples were taken during each 24-hour period and tested for cortisol. The results showed that the married participants had lower cortisol levels than the never married or previously married people across the three day period. This may be due to emotional support system, a sense of belonging and security that is provided by the institution of marriage which helps in dealing with stress. This effect could be more pronounced in an Indian setting such as ours where societal pressure exists to get married (especially experienced in the age group of our study population) which acts as a stressor in its own right. However, all this is true only in the case of relatively happy marriages. A study done by Lapate RC et al¹² at University of Wisconsin-Madison shows that people who experience chronic marital stress are less able to savor positive experiences in life, a hallmark of depression. They are also more likely to report other depressive symptoms. Hence not just the event of marriage but also the quality of the marriage that is important in determining a persons predisposition to stress and depression. Hence all the above findings show that stress needs to be understood as thoroughly as possible in order to identify various risk factors as consequences of stress can be grave. This is especially true in the case of stressful environments like the field of medical education.

Conclusion:

Study shows that stress among post graduate medical students is high. No statistically significant association was found between stress and gender, type of specialty, degree/diploma. Although it is a widely held belief that clinical specialties have more stress than non clinical ones, this study showed that during academic period no such difference is found. Marriage is found to significantly lower stress levels probably because of psychological and emotional support

Recommendations

Time management skills must be taught to students to decrease stress during academic period. Training to help them decrease negative self talk, rehearse and practice coping skills, teach them to feel good with a workable result – Dont be a perfectionist, help them build a network of friends. Relaxation exercises, yoga and meditation must be conducted. A psychological counselor must be accessible to students for additional help

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Cite this article as: Gorantla M. A study on stress levels among exam going post graduate medical students of a medical college in Telangana- A cross sectional study. MRIMS J Health Sciences 2018;6(4):112-115.

Source of Support: Nil. Conflict of Interest: None.