



STRESS AND STRESSORS IN PROFESSIONAL MEDICAL STUDENTS: A CROSS-SECTIONAL STUDY

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ABSTRACT

The medical curriculum course is highly stressful. To master the medical subjects is a huge task which is a time consuming process. In due course there is continuous assessment of the students via frequent examinations. After returning to hostel/home, they hardly get any time to relax. Those students who can't cope up with this kind of lifestyle may more prone to develop stress. So, this study was undertaken to assess the level of stress and its causative factors in 387 professional medical students. of GMC, Chandrapur. A suitable questionnaire having two parts included a prevalidated questionnaire for assessment of exam stress in MBBS students and Yes or No type of questions about causative factors of stress. Stress level was calculated based on the scale developed by Nist and Diehl. A total of 10 questions was asked with five possible choices ranging from never [1] to always[5]. Based on the answers provided, a score of 10 to 19 was set as no anxiety, 20 to 35 as healthy anxiety and above 35 as unhealthy anxiety. The data was collected from them and data analysis was done by using appropriate statistics. 9% students had unhealthy anxiety, 70% students had healthy anxiety and 21% students had no anxiety. Poor performance at exams, lack of time to revise, large content to be learnt and lack of recognition to the work done were found statistically significant in relation to stress. It is more in girls as compared to boys. Since, the medical students are important pillars of our future medical population, it is essential to monitor their stress levels and sources contributing to their anxiety.

KEYWORDS : Professional Medical students, Stress, Stressors

INTRODUCTION:

Stress is defined as a mismatch between perceived demands and perceived capacities to meet those demands.^(1,2) It is a highly subjective phenomenon.⁽³⁾ As per World Health Organization, a stressor is any stimulus which evokes a stress response. Stressors may be real or imagined, and internal or external. The overall impact of a stressor will depend on its features and the characteristics of those who have been affected.⁽⁴⁾

The medical curriculum course is vast and highly stressful.⁽⁵⁻⁹⁾ To master the medical subjects is a huge task which is a time consuming process. In due course there is continuous assessment of the students via frequent examinations (theory, practical & viva).⁽¹⁰⁾ After returning to hostel/home, they have to prepare for the assignments given for the next day. So they hardly get any time to relax. This may lead to fluctuation in their diet and sleeping patterns.⁽¹¹⁾ Those students who can't cope up with this kind of lifestyle may undergo depression or anxiety. Underperformers are more prone to develop stress. Even academically good students show anxiety due to peer competition to constantly deliver good results. Besides students residing in hostels have to remain away from their families which puts an extra psychological pressure which is another contributing factor in development of stress.

The potential consequences of stress, anxiety and depression in the long run may result in social consequences in the form of substance

Annexure 1: Questionnaire for assessment of stress level.

Sr. no.	Questions
1	I have trouble sleeping night before exam
2	I have visible signs of nervousness such as sweaty palms, shaky hands, palpitations and so on right before the exam
3	I feel anxious and have a nervous feeling in my stomach before a exam
4	I feel nauseated before a exam
5	I panic before and during exam
6	I read through the test and feel that I do not know any of the answers
7	My mind goes blank during the exam
8	I have trouble choosing or deciding answers
9	I make mistakes on the easy questions or put answers in the wrong places
10	I recollect the answers once I come out of the examination hall

This questionnaire was given individually to all medical students after taking their informed consent and complete confidentiality was assured. Ethical committee approval was taken prior to the study. Descriptive statistics (percentage) was used to summarize the characteristics of the study subjects. Association between two categorical variables was analyzed by using Chi -square test and

abuse, suicidal tendencies, inter-personal relation difficulties.^(12,13)

So we have conducted this study to assess the level of psychological morbidity and their contributing factors among professional medical students in Government medical college, Chandrapur.

MATERIAL & METHODS:

The observational cross sectional study was conducted among 387 professional medical students in Government Medical College, Chandrapur. It was a questionnaire based study, in which MBBS students of each batch of both gender in the age group between 17 to 20 years were participated. It was completely based on voluntary participation and they were also free to withdraw from the study at any point. Before administering the questionnaire the nature of the study was explained to the students in detail.

A suitable questionnaire was prepared which consisted of two parts. The first part included Yes or No type of questions about causative factors of stress.⁽¹⁰⁾ The second part consisted of a prevalidated questionnaire for assessment of exam stress in MBBS students. Stress level was calculated based on the scale developed by Nist and Diehl.⁽²⁾ A total of 10 questions (Annexure 1) were asked with five possible choices ranging from never [1] to always[5]. Based on the answers provided, the scores were calculated ranging from 10 to a possible 50. A score of 10 to 19 was set as no anxiety, 20 to 35 as healthy anxiety and above 35 as unhealthy anxiety.

value was calculated.

RESULTS:

Figure 1 depicts the total of 387 (n) professional medical students of all batches. Each student filled the questionnaire with 100% participation. There were 196(50.65%) males and 191(49.35%) females in the study.

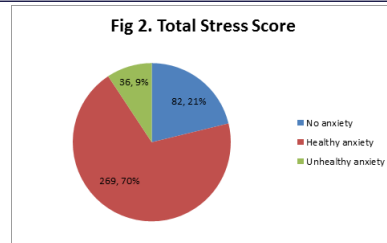
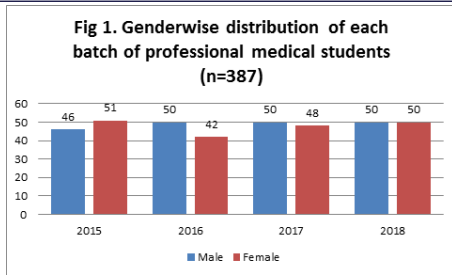


Figure 2 illustrates the total stress score calculated based on the scale developed by Nist and Diehl. There were 82(21%) students with no anxiety with score 10 - 19, 269(70%) had healthy anxiety with score 20 - 35 while 36(9%) had unhealthy anxiety with score >35.

Figure 3 shows the gender wise distribution of stress. Out of 191 female medical students, 130 were having healthy anxiety while 29 had unhealthy anxiety. Out of 196 male medical students, 139 had healthy anxiety while 7 had unhealthy anxiety. This difference was found statistically significant, $p=0.035$, $X^2=4.44$

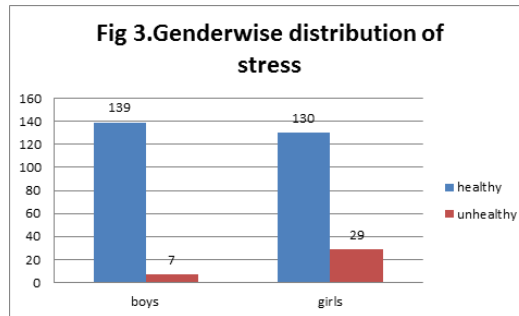


Table 1: Factors contributing to stress

FACTORS CONTRIBUTING TO STRESS		Stress present	Stress absent	Chi square	p value
Poor performance	Yes	150	22	13.08	<0.05
	No	155	60		
Female		159	32	4.44	0.035
	Male	146	50		
Lack of time to revise	Yes	234	31	45.34	<0.05
	No	71	51		
Large content to be learnt	Yes	222	25	50.67	<0.005
	No	83	57		
Lack of recognition to work done	Yes	215	21	54.71	<0.05
	No	90	61		
Difficulty in understanding the subjects	Yes	222	23	55.68	<0.05
	No	83	59		
Competition with fellow students	Yes	192	30	18.36	0.0002
	No	113	52		
Lack of time for extracurricular activities	Yes	159	32	4.44	<0.05
	No	146	50		
Inter-personal conflicts	Yes	32	14	2.67	0.1
	No	273	68		
Home sickness	Yes	20	19	19.68	0.0001
	No	285	63		
Financial issues	Yes	10	20	40.27	<0.05
	No	295	62		
Others (English language, Food, accommodation, parental expectations, etc.) if any	Yes	116	34	0.32	0.571
	No	189	48		

Table 1 shows the factors contributing to stress. Stress is significantly more in those having poor performance. It is more in girls as compared to boys. Lack of time to revise, large content to be learnt and lack of recognition to the work done were also found statistically significant in relation to stress. Difficulty in understanding the subject also increased the stress significantly. Competition with fellow students is also a significant stressor. Again, stress was found significantly more in those having homesickness and financial constraints. Other factors like English language, Food, accommodation, parental expectations, etc. are not significantly associated to stress.

DISCUSSION:

Medical curriculum is highly stressful.⁽⁵⁾ The American Psychological association had stated that anxiety and stress are characterized by feelings of tension, worried thoughts and physical changes. Anxiety is more related to autonomic arousal, skeletal muscle tension and situational aspects whereas stress is related to irritability, impatience

and difficulty in relaxing. The demands and pressures of medical school and residency poses a tremendous challenge to personal wellness for physicians in training leading to high rates of anxiety, depression, burnout and personal distress. Extensive medical curriculum, frequent examinations and fear of failure are sources of constant stress and anxiety for medical students. Psychological Stress among students may have deleterious consequences and it further leads to poor academic performance, sleep disorder, alcohol and substance abuse.⁽⁴⁾

In the present study, an attempt has been made to assess the level of stress among professional medical students. There were 82(21%) students with no anxiety, 269(70%) had healthy anxiety while 36(9%) had unhealthy anxiety before their examination. This study supports many of the findings of previous studies^(4,7,14,15,16,17) in those majority of the medical students experience some level of anxiety during exams. Out of 191 female medical students, 130 were having healthy anxiety

while 29 had unhealthy anxiety. Out of 196 male medical students, 139 had healthy anxiety while 7 had unhealthy anxiety. This difference was found to be statistically significant. Similar result was seen in previous studies.^(16,18) The cause of increased anxiety in females may be due to enthusiasm for academic excellence, competitiveness or may be due to lack of physical exercise.

Various stressors found in our study include lack of time to revise being the most important factor felt by 234 students followed by large content to be learnt by 222 students and lack of recognition to the work done by 215 students. Poor performance at the exams also leads to significant stress in students. Difficulty in understanding the subjects is also commonly seen in the beginning of the professional course. Extensive course load, inappropriate time scheduling and studying beyond their threshold induces lot of stress on the students and they end up sleep deprived. This inadequate and disturbed sleep creates overall fatigue among students which may also lead to lower performance in exams. So the students should be made aware that relaxation and sufficient sleep is very essential for refreshing the brain and to enhance the overall performance.

Students spend many hours studying huge course content, leaving them with no time for self, family recreation and relaxation. Competition with fellow students and lack of time for recreation also emerged as stress factors. More opportunities for recreation facilities like indoor and outdoor sports, music art gallery, debating club, social meets and cultural events should be provided to students in medical colleges. Students should be encouraged to participate in sports and extracurricular activities and enrich their hobbies as it can act as stress buster. Studies have suggested that students engaged in physical activity have low level of anxiety than those having low activity level.^(16,19) Physical activity has also been shown to enhance cognitive functioning^(16,20).

Again, in the present study, stress was found significantly more in those having homesickness and financial constraints. Students are more stressed due lack of parental presence and homesickness during examination time as they have come to stay away from parents for the first time and are adjusting to studying alone in a new environment. Students should be encouraged to make healthy interactions with colleagues, seniors and friends as it can be helpful in adapting to new environment.

Other factors like English language, quality of food in mess, hostel accommodation, parental expectations, etc, are not significantly associated to stress. The medical students have to face lot of expectations and the compulsion to succeed which creates excessive pressure and anxiety among them. Parents should be counselled in order to avoid their over expectations from their kids as in medical school to remain always at the top is difficult.

Various studies have come forth and recommend various coping methods to reduce student anxiety and stress.^(16,21) Stress management workshops and training programmes should be conducted for students at the entry of students in a medical school. These stress management workshops will be helpful to improve the knowledge of students to stress and enhance their ability to cope with stresses associated with a demanding professional medical life. They should be taught various relaxation techniques like meditation, yoga, pranayam can help them cope with stress better, reduce test anxiety and avoid stress burnout^(16,22). Professional, personal development, mental wellness and psycho educational lectures, soft skill development classes should be taken for students for their better personal, professional and mental growth. Student counseling should also be initiated at the beginning to help the vulnerable student's. Informal mentorship programmes in which a teacher can act as a mentor to a group of students and a mentor can help them with their academic and nonacademic problem scan be very effective. This support system provide opportunity to the students to express emotions, to resolve academic and emotional conflicts and enhance affiliation with peers and help them in better adaptation to environmental stresses.

This highlights the importance to develop appropriate strategies in curriculum, to introduce horizontal and vertical integration, structured teaching with specific curriculum objectives, small group teachings for improving the learning skills of students and hence help in reducing student academic anxiety.

CONCLUSION:

Our study concludes high level of stress in professional medical students. Females suffered from higher anxiety than males. It also highlights that academics along with psychosocial and lifestyle factors are contributing to stress. Medical students are important pillars of our future medical population. It is essential to monitor their stress levels and sources contributing to their anxiety. The present study also highlights the need to incorporate strategies to improve the teaching, learning, evaluation and educational environment and help the students develop stress coping skills in early medical career in order to reduce negative effects of stresses of medical life on their health.

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