

Coping strategies for academic stress among medicalinterns appearing for entrance examination: A cross sectional study in Mumbai

¹Dr.Pranoti Chandorkar, Junior resident, LTMMC & GH, Mumbai

²Dr. Chetan Jadhav, Junior resident, LTMMC & GH, Mumbai

³Dr.Manissha Srivastav, Associate Professor, Department of community medicine, LTMMC & GH, Mumbai

⁴Dr. Seema S Bansode Gokhe, Professor & Head, Department of community medicine, LTMMC & GH, Mumbai

Corresponding Author: Dr. Pranoti Chandorkar, Junior resident, LTMMC & GH, Mumbai

How to citation this article: Dr. Pranoti Chandorkar, Dr. Chetan Jadhav, Dr. Manissha Srivastav, Dr. Seema S Bansode Gokhe, “Coping strategies for academic stress among medicalinterns appearing for entrance examination: A cross sectional study in Mumbai”, IJMACR- April - 2023, Volume – 6, Issue - 2, P. No. 27 – 33.

Open Access Article: © 2023, Dr. Pranoti Chandorkar, et al. This is an open access journal and article distributed under the terms of the creative commons attribution license (<http://creativecommons.org/licenses/by/4.0>). Which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Background: Medical curriculum is very vast and demanding and is recognized as very stressful that can have a negative impact on the student’s well being. Depression, anxiety, behavioral problems, irritability, etc. are problems in students with high academic stress. Short-term coping methods (eating, sleeping, and smoking) reduce tension temporarily. Drawing on past experience and talking to others are some long-term stress reduction methods. The purpose of the study is to assess the academic stress in interns appearing for entrance examination.

Objectives

- 1.To identify sources of stress and the predominant stressor among study participants
2. To identify coping strategies adopted by the study participants
3. To observe association of sociodemographic factors with stress

Material & Methods: A cross sectional study was conducted among interns in a medical college in Mumbai. 112 interns were involved in the study using universal sampling method. A questionnaire with sociodemographic details and Cohen’s perceived stress scale questions was used. Logistic regression analysis was done.

Results: Among 112 study subjects, 74.1% of majority of subjects (N=83) were suffering from moderate levels of stress . Academic stress was mainly associated with frequent examinations in 57.1% (N = 64). Listening to music was the most common strategy to relieve stress in 65.2% (N=73).

Conclusion: The perceived stress was higher among male subjects in 51.8% (N=43).Appropriate and timely

interventions to reduce the stress levels can be taught in the medical college. The academic curriculum should be reframed and evaluated according to the pattern of entrance examination. Each student should understand one's potential and study with stress management during examination to perform better. Extracurricular activities, counselling cells should be encouraged in the institutes.

Keywords: Coping Strategies, Cohen's Perceived Stress Scale, Academic Stress

Introduction

Stress is a subjective experience which cannot be avoided as it results from intricate interactions between an individual and his or her environment. It usually occurs when a person's situational demand exceeds that of his resources. Excessive stress has also been reported to result in reduced self-esteem, as well as affect academic achievement and personal and professional development. Medical curriculum is very vast and demanding and has been recognized as very stressful that can have a negative impact on the student's well-being.(1)

Stress is now understood as a lifestyle crisis(Masih &Gulrez, 2006) affecting any individual regardless of their developmental stage(Banerjee & Chatterjee, 2016.According to the statistics published by National Crime Records Bureau, there is one student every hour that commits suicide(Saha,2017). The bureau registered 1.8% students who committed suicide due to failing in examinations and an 80% rise in suicide rates during a one-year time frame. Academic stress has been identified as the primary cause of these alarming figures. Depression, anxiety, behavioural problems, irritability, etc. are few of the many problems reported in students with high academic stress (3) Life as a medical student

calls for complete commitment and responsibility toward academic tasks and care provided to patients.

The prevalence of stress among medical students has been reported in various studies between 20.9% and 94.5%. [1,3-6]

The various stressors among medical students involve the factors such as vastness of academic curriculum, clinical duties, long emergency duties, staying away from family, examination system, and administration.(7) Occupational stress is "any discomfort which is felt and perceived at a personal level and triggered by instances, events, or situations that are too intense and frequent in nature so as to exceed a person's coping capabilities and resources to handle them adequately(4)

Occupational stress leads to reduced productivity and performance, increased sickness and absenteeism, decreased motivation, and morale among employees(5)

Cope is the constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person. Coping strategies come under two broad classifications, i.e., adaptive and maladaptive coping strategies. The problem-focused forms of coping (so-called adaptive) are likely to be associated with lower levels of negative health outcomes which caused by stressors and that coping of an emotional-focused (nonadaptive) types, such as self-blame, rumination, or escape/avoidance is likely to be associated with increased negative health (6)

Coping behaviors are generally classified as problem-oriented (long-term) or affective-oriented (short-term) methods. The problem-oriented strategies are those used to solve stress-producing problems whereas the affective-oriented manage the emotional component involved. Short-term coping methods (eating, sleeping,

and smoking) reduce tension temporarily but do not deal directly with the stressful situation. Drawing on past experience and talking it out with others are examples of long-term stress reduction methods. The problem-oriented strategies are seen as constructive ways of dealing with stress.(7)

Student represents the society's investment for future. Their mental health and wellbeing are important not only in its own right but also as a factor contributing to the larger society's well being. College students frequently have more complex problems today than they did over decade ago common stressors in college include greater academic demands, being on your own in a new environment, changes in family relations, changes in social life, exposure to new people ideas and temptations.(8)

Stress is defined as inability to cope with perceived (real or imagined) threat to one's mental, physical, emotional, or spiritual well-being, which results in series of physiological responses and adaptations (9)

Methodology

Permission of the Dean was taken for conducting a research study at the medical college in Mumbai. The study was conducted after obtaining permission from the Institutional Ethics Committee .

This was a cross-sectional study among interns of a teaching medical college in Mumbai. The sample for this study consisted of 112 medical interns who were posted at various departments as part of the compulsory rotatory internship in medical college.

The subjects who gave consent to participate in the study were asked to complete the questionnaire consisting of parts on sociodemographic profile and Perceived Stress Scale (PSS). The Cohen's PSS is a 10-item scale that includes various questions about participants' stressful

thoughts related to various life situations within the last month. Each item is rated on a 5-point answer scale ranging from 0: "never" to 4: "very often. The subjects were asked detailed history by Face-to-face interview.

Inclusion criteria: Only academic stressors were included in the study. The stressors due to psychosocial reasons worry about future, high parental expectation etc and environmental stressors like living conditions in hostel/ home, adjustment with roommates, neighbours were not included.

Data was extracted in the following format:

- Sociodemographic profile
- Academic profile
- Coping strategies to relieve stress

Data was compiled and tabulated, results were analysed using SPSS and presented in graphical form. Collected information of the subjects is kept confidential.

Results

The majority of the respondents were male (52.3%). Most of them studied in private in primary and secondary English medium schools(81.3%).

Figure 1. Mean perceived stress of the study participants

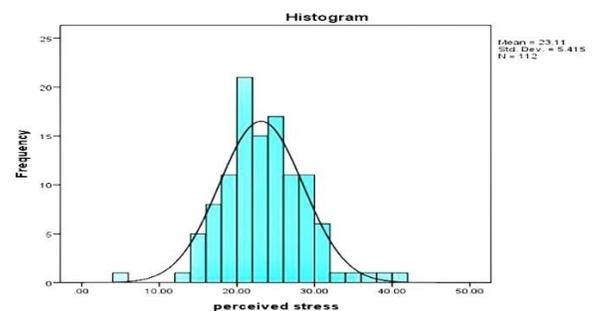


Figure 1 shows the mean perceived stress of the study participants. The mean perceived stress score was 23.11 ± 5.41 . The median perceived stress score of the observations was 23. Mean perceived stress score among female and male interns was 23.98 ± 5.57 and 22.14 ± 5.00 respectively.

The sources of stress were categorized mainly the academic stressors.

Among the 112 subjects, the majority (57.1%) had the frequency of examinations (n=64) as the main source of stress academically, followed by lack of recreation (n=52) seen in 46.4% subjects. Vastness of curriculum was the source in 43.8% subjects (n=49) which led to poor performance and a fear of failure in 37.5% subjects (n=42). Competition with peer group (n=42) was the source of stress in 37.5% subjects. (Figure 2).

Figure 2: Bar diagram showing academic stressors in study participants

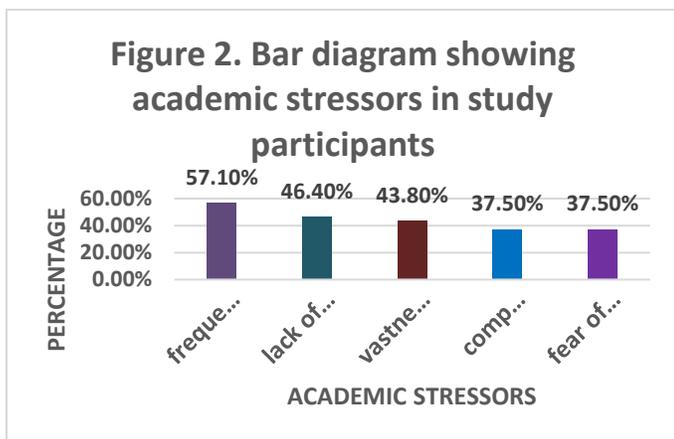


Table 1: Sociodemographic details of study participants (n=112)

		OR	(95%CI) for OR	p
Gender	Female	2.039	0.576-7.219	0.269
	Male	1 (reference)		
Education	Public	0.493	0.123-1.969	0.317
	Private	1 (reference)		
Medium of education	English	1.129	.21-6.065	0.888
	Others	1 (reference)		
Father's occupation	Doctor	1.397	0.095-20.647	0.808
	Others	1 (reference)		
Mother's occupation	Doctor	1.042	0.069-15.684	0.976

	Others	1 (reference)		
Socio-Economic status	Upper lower	44.462	0.64-3091	0.08
	Lower middle	1 (reference)		
	Upper middle			
	Upper			
H/O substance abuse	Yes	0.69	0.078-6.116	0.739
	No	1 (reference)		
Sleep	Yes	0.966	0.203-4.598	0.966
	No	1 (reference)		
Appetite	Yes	11.527	1.149-115-64	0.038
	No	1 (reference)		
Family H/O Illness	Yes	0.913	0.217-3.84	0.901
	No	1 (reference)		
Past H/O psychiatric Illness	Yes	0.081	0.011-0.575	0.012
	No	1 (reference)		
Working hours	0-6 hrs	0.334	0.049-2.256	0.261
	6-12 hrs	1 (reference)		
Time spent in academics	0-1 hr	0.057	0.003-0.96	0.047
	1-2 hrs	1 (reference)		
	2-6 hrs			
	> 6hrs			

It was found that gender, schooling, medium of education, fathers occupation, mothers occupation, socioeconomic status had no significant influence on stress level.

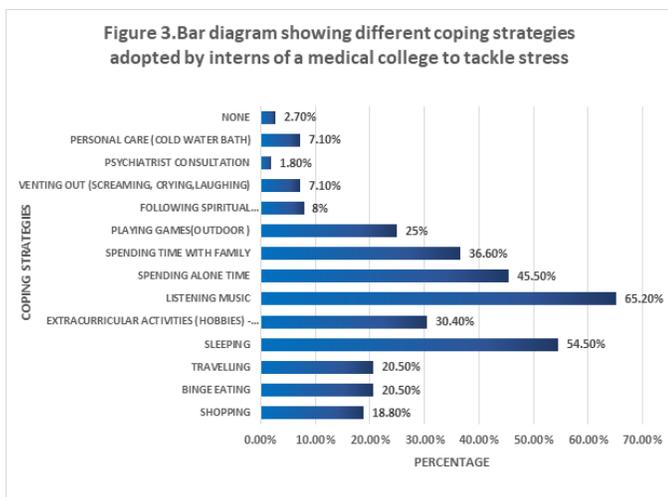
History of substance abuse, sleep, working hours, time spent in recreation also had no significant effect on

stress.

Appetite, Time spent in academics, history of psychiatric illness is significant and important sociodemographic determinant of stress.

Coping strategies adopted by interns to relieve stress are shown in Figure3. Listening to music (65.2%) was the most common strategy employed by the students to relieve stress followed by sleeping (54.5%) and spending alone time (45.5%).

Figure 3: Coping strategies adopted by the study participants to reduce stress.

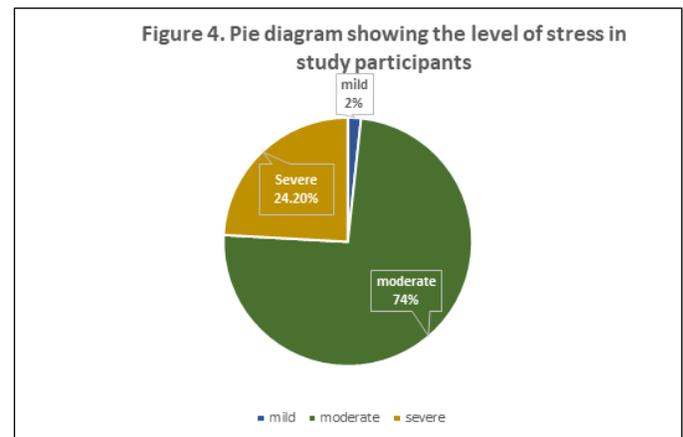


Discussion

The result of this study indicated that majority of the subjects experienced (74.1%) moderate level of stress followed by high(23.8%) and (1.7%) low levels of stress (Figure.4). A study done by **Capuras, Shyde B et al (2016)** on interns found that many respondents (60.3%) experienced a moderate level of perceived academic stress which indicated that they were experiencing difficulties in coping with their studies. It was found that high levels of stress were reported among undergraduate students in study done by **Parmeshwar Satpathy et al(2021)**. Most of the studies were done on undergraduate medical students and little research were done on interns.

The mean PSS score was higher among females than males in our study. It was also seen in study done by **Abd. Basith et al (2021)** students in China that females have higher mean score for stress than males. In a study by **Mussarat Jabeen Khan et al (2013)** there were similar results with gender differences in stress with high PSS score in females.

Figure 4: Pie diagram showing the level of stress in study participants.



In our study, the majority (57.1%) had the frequency of examinations (n=64) as the main source of stress academically, followed by lack of recreation (n=52) seen in 46.4% subjects. Vastness of curriculum was the source in 43.8% subjects (n=49) which led to poor performance and a fear of failure in 37.5% subjects (n=42). Competition with peer group (n=42) was the source of stress in 37.5% subjects. According to a study done by **Parmeshwar Satpathy et al (2021)**, 68.5% subjects had vastness of curriculum as the main academic stressor followed by fear of failure / poor performance in examination which was seen in 52.2% subjects. Lack of recreation and competition with peer group was seen in 42% and 39% subjects respectively. Frequency of examination was seen in 23% subjects. Another study by **Joseph, Nitin et al (2021)** found that fear of failure in exams was seen in 51.5% subjects followed by

vastness of curriculum as the major academic stressor in 44.2% subjects.

Appetite, Time spent in academics, past history of psychiatric illness is significant and important sociodemographic determinant of stress in our study. Gender was an important sociodemographic determinant of stress in a study done by **Parmeshwar Satpathy et al (2021)**.

Listening to music (65.2%) was the most common coping strategy employed by the students to relieve stress followed by sleeping (54.5%) and spending alone time (45.5%) in our study. In a study by **Joseph, Nitin et al (2021)** The various measures adopted by participants to deal with stress were sharing problems with others [223(56.2%)], meditation [132(56.8%)], performing yoga [50(12.8%)], sleeping [29(7.5%)], practicing Tai Chi [13(3.5%)] and listening to music [11(3%)]. Other methods like watching television and exercising were reported by 8(2.2%) participants each, aromatherapy and sports by 5(1.3%) each, eating favourite food and consuming alcohol were the other coping strategies adopted by the subjects.

In a study done by **Parmeshwar Satpathy et al (2021)**, Pursuing their hobbies (28.08%) was the most common strategy employed by the students to relieve stress followed by listening to music (27.52%), while 24.71% of them were not involved in any activity to cope up with stress.

Conclusion

The perceived stress was higher among male subjects (43 subjects- 51.8%). Appropriate and timely interventions to reduce the stress levels can be taught in the medical college by taking stress management sessions, workshops on time management for studies, career counselling. The academic curriculum should be

reframed and evaluated according to the pattern of entrance examination. Each student should understand one's potential and study with stress management during examination to perform better. Extracurricular activities, counselling cells should be encouraged in the institutes. Peer educators and mentors can help in reducing stress by providing solutions to the aggravating factors. At the individual level, they should identify the stressor and adopt healthy coping behaviour to improve academic performance and minimize stress.

Acknowledgments- We would like to acknowledge Dr Kiran Jagtap for the valuable help in statistical analysis. We would thank all the study participants (interns) for taking out their valuable time for this study.

References

1. Satpathy P, Siddiqui N, Parida D, Sutar R. Prevalence of stress, stressors, and coping strategies among medical undergraduate students in a medical college of Mumbai. *J Edu Health Promot* 2021; 10:318.
2. Vinothkumar M, Arathi A, Joseph M, Nayana P, Jishma EJ, Sahana U. Coping, perceived stress, and job satisfaction among medical interns: The mediating effect of mindfulness. *Ind Psychiatry J*. 2016 Jul-Dec;25(2):195-201. doi: 10.4103/ipj.ipj_98_14. PMID: 28659700; PMCID: PMC5479094.
3. Academic Stress and its Sources among University Students K. Jayasankara Reddy*, Ms. Karishma Rajanmen On And Anjanathattil.
4. Malta M. Stress at work, a concept in stress human factors limited. *Bus Psychol Strategy Dev*. 2004;33:125–33.

5. Leape LL, Fromson JA. Problem doctors: Is there a system-level solution? *Ann Intern Med.* 2006;144:107–15.
6. Lazarus RS, Folkman S. *Stress: Appraisal, and Coping.* New York: Springer Publication; 2013
7. Keller KL. The management of stress and prevention of burnout in emergency nurses. *J EmergNurs.* 1990;16:90–5
8. Academic Stress, Anxiety and Depression among College Students- A Brief Review Narasappa Kumaraswamy *International Review of Social Sciences and Humanities* Vol. 5, No. 1 (2013), pp. 135-143
9. Brian Seaward. The nature of stress. In: *Managing Stress: Principles and Strategies for Health and Well-Being.* 7th edition. Jones and Bartlett learning. 2012; 6.
10. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *J Health Soc Behav*1983;24:385-96.
11. Chowdhury R, Mukherjee A, Mitra K, Naskar S, Karmakar PR, Lahiri SK. Perceived psychological stress among undergraduate medical students: Role of academic factors. *Indian J Public Health* 2017;61:55-7.
12. Amr M, Hady El Gilany A, El-Hawary A. Does gender predict medical students' stress in Mansoura, Egypt? *Med Educ Online* 2008;13:12.
13. Yusoff MS, Abdul Rahim AF, Baba AA, Ismail SB, Mat Pa MN, Esa AR. Prevalence and associated factors of stress, anxiety and depression among prospective medical students. *Asian J Psychiatr*2013;6:128-33.
14. Fares J, Al Tabosh H, Saadeddin Z, El Mouhayyar C, Aridi H. Stress, burnout and coping strategies in preclinical medical students. *N Am J Med Sci* 2016;8:75-81.
15. Shaikh BT, Kahloon A, Kazmi M, Khalid H, Nawaz K, Khan N, et al. Students, stress and coping strategies: A case of Pakistani medical school. *Educ Health (Abingdon)* 2004; 17:346-53.
16. Rada RE, Johnson-Leong C. Stress, burnout, anxiety and depression among dentists. *J Am Dent Assoc* 2004;135:788-94
17. Basith, AbdSyahputra, AndiFitriyadi, SlamatiRosmaiyadiFitriTriani, Susan NeniAcademic stress and coping strategy in relation to academic achievement *Cakrawala Pendidikan*, Vol. 40, No. 2, June 2021
18. Capuras, Shyde B. Engada, May Valerie R. Inoferio, Homer Joseph T. Querubin, Iris Elline M. Adversity Quotient And Perceived Academic Stress As Predictors Of The Academic Performance Of Cdu-Crs Internship Candidates - thesis paper (2016)
19. Altaf, Seema Kausar, Hafsa Khan, MussaratJabeen.Effect of perceived academic stress on students' performance. *FWU Journal of Social Sciences*, Winter 2013, Vol. 7, No. 2, 146-151
20. Joseph, Nitin Nallapati, Aneesha Machado, Michelle Xavier Nair, Varsha Matele, Shreya Muthusamy, Navya Sinha, Aditi. Assessment of academic stress and its coping mechanisms among medical undergraduate students in a large Midwestern university *Current Psychology* (2021) 40:2599–2609 <https://doi.org/10.1007/s12144-020-00963-2>