



Identification of Academic Stressors and Social Coping Strategies among Medical Undergraduates- A Cross-Sectional Study

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ABSTRACT

Background: Academic stress is a psychological and physiological response that arises when academic demands exceed a student's perceived ability to cope. Assessment of the burden of academic stress, identification of stress-associated symptoms and understanding the coping mechanisms are vital to making impactful targeted interventions.

Methodology: A descriptive study was conducted among 317 medical undergraduates from various medical colleges. The perceived stress levels were measured using the PSS-10 scale score. The most common self-reported stressors, symptoms, and coping mechanisms were taken into account from the responses filled out by the participants.

Results: The mean age of the study participants was 21.03 ± 1.62 years, and females predominated (72.6%). A moderate level of stress was found in 99.1% of the study participants. High syllabus load 200 (63.1%), long college hours 195 (61.5%) and inability to manage time efficiently 187 (59%), were the most common stressors identified. Sleep disturbance (50.8%) was the most prevalent stress-related symptom, and increased caffeine/energy drinks intake (75.1%) was the most frequent change in personal habits. The social support strategy most frequently used was talking with family and friends (41%). Only 4.7% sought professional counselling.

Conclusion: Medical undergraduates experienced moderate stress and preferred informal coping mechanisms. Further research should examine the future of informal mechanisms for effectively managing moderate stress.

Keywords: Medical undergraduates, academic stress, sleep disturbance

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INTRODUCTION

Academic stress is an adaptive psychological process that occurs in learning environments when students face challenges and perceive them as stressful. It arises when academic demands exceed a student's perceived ability to cope [1]. Academic stress may lead to suboptimal academic performance, which may further amplify stress, causing students to fall into a self-perpetuating spiral undermining their productivity, self-esteem and wellbeing. [2]. The inability to cope with elevated levels of stress also impacts work-life balance and increases the chance of burnout.[3] The occurrence of academic stress among students is universal. However, the burden of this stress varies from place to place, as shown by various studies. A study conducted in Tamil Nadu revealed that the 78% of the students experienced moderate to high levels of stress, while a study conducted in Uttar Pradesh found 48% students to be stressed. [4][5] The prevalence of stress among medical undergraduates was reported to be 20.9% in a Nepalese study, while it was found to 63.8 % in a Saudi Arabian study.[6][7] Another study conducted in Andhra Pradesh among medical undergraduates reported a prevalence of stress of 92.5%. [8] Multiple factors contribute to increased levels of academic stress. These include factors like long college hours, extensive syllabi, heavy workload during clinical rotations, frequent formative assessments, poor work-life balance and sometimes financial constraints. A vast syllabus was found to be the most important cause of high stress in the majority of medical students (40.9%) in another study conducted in Saudi Arabia. [9] Stress may manifest as anxiety, depression and various psychosomatic symptoms, including palpitations, sleep disturbances, heartburn and fatigue, as shown by a study conducted by Singh et al. Females were found to be significantly more affected by stress than males. [10] Social support helps individuals gain perspective, reduces their sense of isolation and fosters resilience and hence is one of the most relevant strategies to counter stress. Studies have consistently linked the presence of a social support system with lowered levels of stress among medical

undergraduates. The source of support can be family members, peers, mentors, faculty members and friends. Perceived social support from family (mean=5.21) and friends (mean=5.34) had a significant negative correlation with stress levels ($r=-0.429$ and -0.219 , $p<0.001$) in a study conducted among medical undergraduates. [11] In view of the paucity of research related to academic stress in Punjab, this study was conducted with the aim to assess level of academic stress, identify the associated factors, document the self-reported stress-related symptoms and social support coping mechanisms adopted by medical undergraduates for the same.

METHODOLOGY

This descriptive cross-sectional study was performed on medical undergraduates as part of electives under the department of Community Medicine after taking approval from the Institutional Ethics Committee vide letter no SGRD/IEC/2025-559 dated 11-12-2025. Data collection was done by a pretested questionnaire circulated through Google Form. The Google Forms were shared in various student social media groups on 12-12-2025 and the response acceptance was closed after a week. The level of stress was assessed by the PSS-10 scale, a 10 item, 5-point Likert scale. A score of 0-13 is considered low stress, 14-26 moderate stress & 27-40 high stress on PSS-10 scale. [12] Major factors contributing to academic stress and self-reported symptoms of stress were identified using a self-designed checklist curated from the literature. The questionnaire concluded with a question on the social support strategy adopted by the students as a coping mechanism to deal with stress. The questionnaire was pilot tested on 15 students, who were not a part of the study, to check for any discrepancy or deficiency. After minor changes, the final questionnaire was shared through google forms.

The data were analysed using SPSS Statistics for Windows, version 24.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were presented as means and standard deviation for continuous variables and frequencies with percentages for

categorical variables. Inferential statistics could not be applied, as in almost all of the study participants, 314 (99.0%), the perceived level of stress was moderate.

RESULTS

Table 1 depicts the socio-demographic profile of 317 study participants. Most of the study participants, 227 (71.6%) belonged to the 20–22 year- old age group, followed by 46 (14.5%), in the 23 –25 year old age group. Only 1 (0.3%), belonged to the 26 –28 year- old age group. The mean age of study participants was

21.03 ± 1.62 years. Most of the study participants were females, 230 (72.6%), while the rest were 87 (27.4%) males. 204 (64.4%) of the study participants belonged to the admission batch from 2023 to 2025, while the rest 113 (35.6%) belonged to the admission batches between 2020 and 2022. As far as the nature of the medical institutes was concerned, 212 (66.6%) were studying in private institutes, 84 (26.5%) in charitable institutes and only 21 (6.6%) in government medical colleges.

TABLE 1: Distribution of the study participants according to their socio-demographic variables

Sociodemographic variable	Frequency (%age) n=317
Age	
17-19	43 (13.6%)
20-22	227 (71.6%)
23-25	46 (14.5%)
26-28	1 (0.3%)
Sex	
Male	87 (27.4%)
Female	230 (72.6%)
Year of admission	
2020- 2022	113 (35.6%)
2023- 2025	204 (64.4%)
Type of institution	
Government	21 (6.6%)
Private	212 (66.6%)
Charitable	84 (26.5%)
State of permanent residence	
Punjab	286 (90.2%)
Non- Punjab	31 (9.8%)
Studying in the same state as a resident of	
Yes	272 (85.8%)
No	45 (14.2%)
Current accommodation	
Home	74 (23.3%)
Hostel	227 (71.6%)
Paying Guest	12 (3.8%)
Others	4 (1.3%)
Study hours(other than college routine classes)	
<3 hours	194 (61.2%)
3-6 hours	113 (35.6%)

>6 hours	10 (3.2%)
No. of classes missed in the past month for leisure activities	
>5 times	30 (9.5%)
3-5 times	45 (14.2%)
1-2 times	133 (42%)
None	109 (34.4%)

An overwhelming majority, 286 (90.2%), were permanent residents of Punjab, and 272(85.8%) of them were also studying in their state of residence. The current accommodation of the study participants was reported to be hostels by 227(71.6%), their own homes by 74(23.3%) and as paying guests by 12(3.8%). On being asked how much time was being spent per day on academic -related activities outside of regular classes, the majority, 194(61.3%), reported spending less than three hours, 113(35.6%) reported spending between 3 and 6 hours, and 10(3.2%) reported spending more than 6 hours. Missing classes for leisure activities was taken as an

indicator of a low level of academic stress among students. In the past month, 109 (34.4%) stated never missed classes, 133(42%) participants reported missing classes 1-2 times, 45 (14.2%) missed classes 3-5 times, and 30(9.5%) missed more than 5 times. Perceived Stress Scale-10 had a fair internal consistency with a Cronbach alpha of .73. Perceived stress level, as assessed using the scale, showed the mean score to be 19.9 ± 2.6 and a range of 13 to 29. Of the 317 study participants. 314(99.1%) perceived a moderate level of stress, 2 (0.6%) experienced a low level of stress, while 1 (0.3%) had a high perceived stress. (Table-2)

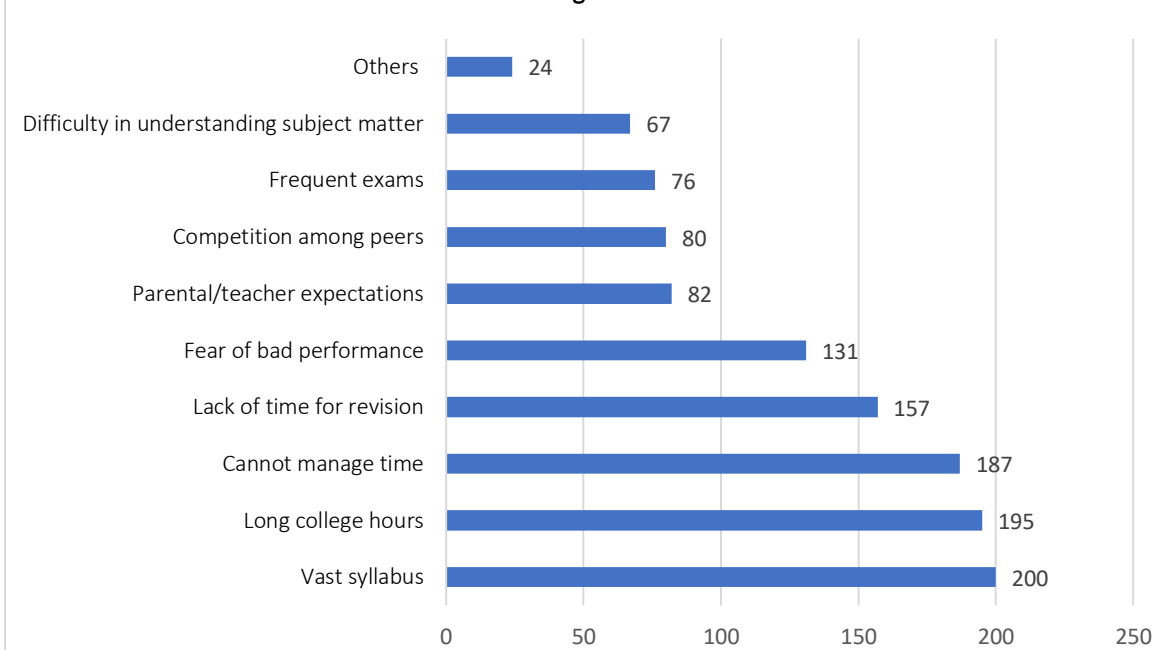
Table 2- Distribution of study participants according to perceived level of stress

Level of stress (PSS-10)	Frequency (%age) n=317
Mild	02 (0.6%)
Moderate	314 (99.0%)
High	01 (0.3%)

Analysis of all responses revealed that the major stressors contributing to academic stress among medical undergraduates were high syllabus load 200 (63.1%), followed by

long college hours 195(61.5%), inability to manage time efficiently 187(59%), lack of time for revision 157(49.5%) and fear of bad performance 131(41.3%). (Fig 1)

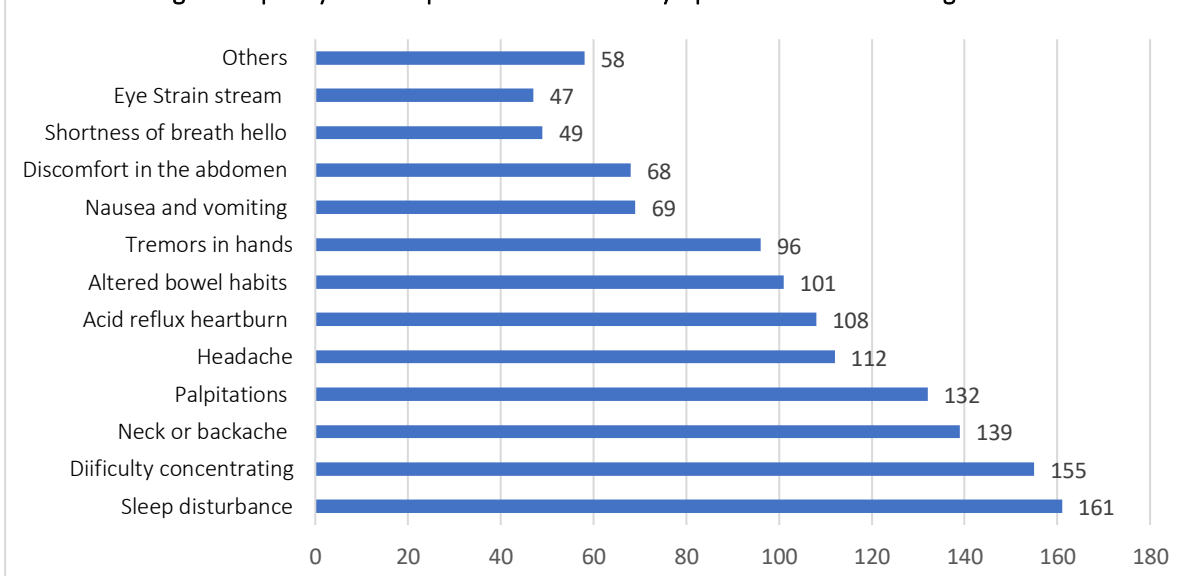
Fig 1-Frequency distribution of stressors contributing to academic stress in medical undergraduates



The most common stress-associated symptom reported by 161(50.8%) study participants was sleep disturbances, followed by difficulty in concentration 155 (48.8%),

neck and back pain by 139(43.8%), palpitations by 132(41.6%), headache by 112(35.3%) and acid reflux by 108(34%).(Fig 2)

Fig 2- Frequency of self reported stress related symptoms in medical undergraduates



Changes in personal habits as reported by study participants were increased caffeine intake (tea, coffee, energy drink) by 238 (75.1%), a tendency to skip meals, eating comfort foods and irregular eating patterns by

230 (72.5%), a lack of regard for personal grooming by 208 (65.6%) and mindless scrolling on social media in attempt to distract oneself by 82 (25.8%) Restlessness (nail biting, hair pulling , leg shaking) was reported by

128(40.4%) participants. Study participants were asked to state their preferred social coping strategy to deal with stress. 130(41%) of the study participants preferred talking with their family and friends, 100 (31.5%) participants chose to ignore the stress,

suggesting denial or suppression of stress, while very few, 72(22.7%), were able to transform it into positivity through self-regulating practices like exercise, yoga and mindfulness. 15 (4.7%) participants opted for professional help to deal with stress. (Fig-3)

Fig3- Distribution of study participants according to social support strategy



DISCUSSION

In the present study, the mean age of study participants was 21.03 ± 1.62 years. A nearly similar mean age of 20.48 ± 0.4 years was found in a study conducted in Mysore. [13]

Sex ratio of the study participants, 230 (72.6%) females to 87 (27.4%), was comparable to the sex ratio of a study conducted by Shah et al., where 108 (67.08%) participants were females and 53 (30.92%) males. The latter also showed that female sex was significantly associated with a higher PSS score ($p < 0.05$) using univariate analysis. [14]

A study conducted on 210 medical students in Riyadh categorized the majority of the participants (74.8%) as having moderate stress, whereas 14.3% reported high stress and 11.0% reported low stress. [15] Another study in Thrissur, India, found the prevalence of moderate stress in medical undergraduates to be 73% [16]. This is in contrast to the findings in our study, which found the prevalence of moderate stress to be 99.0%.

Our study found that 200 (63.1%) respondents regarded voluminous syllabus load as their major source of academic stress, as was found by Almojali et al., who reported that 76% students cited the vastness of syllabi as a major stressor. [17] On the other hand, a study conducted in Pakistan revealed that high parental expectations 101 (63%) were the

most frequently occurring source of academic stress. [14] Another study found academic pressure as the cited stressor, followed by examination-related anxiety, excessive workload and lack of faculty support. [4]

Vastness of academic curriculum ($P < 0.001$), fear of failure or poor performance in examination ($P < 0.001$), and lack of recreation ($P = 0.009$) were identified as significant stressors among medical undergraduates, as shown in the results of a study by Anuradha et al., important determinants of stress. [18]

Sleep disturbance was cited as the most common symptom of stress reported by 161(50.7%) study participants. In a study conducted in Turkey, 177 (79.4%) of the subjects had poor sleep quality. [19] Our study also reflected a change in personal habits in that 138 (43.5%) participants increased their caffeine while reported 71% high caffeine consumption prevalence rose to 71% in a bid to improve academic performance. [20]

The present study showed that students adopted various coping strategies to manage stress, with the majority [130 participants (41%)] preferring to discuss and talk with their family and friends. On the other hand, according to J. Suriakumar *et al.*, [4] students employed various coping strategies to manage stress, with 45% engaging in exercise and 40% relying on peer support.



CONCLUSION

The majority of medical undergraduates experienced a moderate level of stress with high syllabus load, long college hours and inability to manage time efficiently being the most frequent stressors. Sleep disturbance was cited as the most common symptom of stress. The most frequent personal habit change during stress was increased intake of caffeine. The majority of the participants preferred talking to their friends and family as a coping strategy.

This study highlights the need to address academic stress in medical undergraduates and also the need for educational institutes to prioritise comprehensive wellness programmes while maintaining the rigours of prescribed standards of teaching and learning.

RECOMMENDATIONS

For overcoming academic stress, universities

should prioritize mental health support and a healthy learning environment, identify various risk factors among students, provide counselling services, implementation of mentor- mentee programme for sound faculty-student interaction, incorporate stress management techniques like yoga, mindfulness, meditation, etc into the curriculum, creating a supportive environment.

This study also opens future opportunities for extensive and comprehensive research on stress prognosis and its coping mechanisms.

LIMITATIONS

The study was conducted with a small sample size over a short duration of time. The rigour of participant selection could not be observed as the forms were floated as Google Form. Self-selection bias might also be found, as the information was self-reported.

REFERENCES

1. Pascoe MC, Hetrick SE, Parker AG. The impact of stress on students in secondary school and higher education. *J. Adolesc. Youth.* 2020;25 (1): 104-12, doi: 10.1080/02673843.2019.1596823
2. Stewart SM, Lam TH, Betson CL, Wong CM, Wong AM. A prospective analysis of stress and academic performance in the first two years of medical school. *Med Educ.* 1999;33(4):243-250. doi:10.1046/j.1365-2923.1999.00294x
3. Pérez-Jorge D, Boutaba-Alehyani M, González-Contreras AI, et al. Examining the effects of academic stress on student well-being in higher education. *Humanit Soc Sci Commun.* 2025;12:449.
4. Suriakumar J, Murugalakshmi T. Stress factors among medical students: a survey-based analysis of academic and personal challenge. *Eur J Clin Med.* 2025 Apr;15(4):436-441. Doi:10.61336/ejcm/25-04-80.
5. Chaudhary V, Upadhyay D, Singh SP, Singh A, Joshi HS, Katyal R. A cross-sectional study to assess perceived stress and stressors associated with it among undergraduate medical students in a private medical college of Uttar Pradesh, India. *Int J Community Med Public Health.* 2016;3(10):2763-2768. doi:10.18203/2394-6040.ijcmph20162037.
6. Sreeramareddy CT, Shankar PR, Binu VS *et al.* Psychological morbidity, sources of stress and coping strategies among undergraduate medical students of Nepal. *BMC Med Educ.* 2007;7:26.doi:10.1186/1472-6920-7-26
7. Abdulghani HM, Alkanhal AA, Mahmoud ES, Ponnampuruma GG, Alfaris EA. Stress and its effects on medical students: a cross-sectional study at a college of medicine in Saudi Arabia. *J Health Popul Nutr.* 2011;29(5):516-22.
8. Kotinadham S, Myla VL, Daniyala BK, Myla AR, Parsha VA. Prevalence of perceived stress among undergraduate students in a medical college, Andhra Pradesh: An observational study. *Natl J Physiol Pharm Pharmacol* 2024;14(06):1204-11.
9. Al-Shahrani MM, Alasmri BS, Al-Shahrani RM, Al-Moalwi NM, Al-Qahtani AA, Siddiqui AF. The prevalence and associated factors of academic stress among medical students of King Khalid University: an analytical cross-sectional study. *Healthcare (Basel).* 2023;11(14):2029. doi:10.3390/healthcare11142029. PMID: 37510470; PMCID: PMC10378871.pmc.ncbi.nlm.nih.gov
10. Singh G, Namita, Nirvan H, Srivastava N. Perceived Stress Among Medical Undergraduates and its Correlation with Psychosomatic Stress: A Cross-Sectional Study. *IJPCR.* 2023; 15(10); 76-82.
11. Abdul Aziz NA, Baharudin NS, Alias NA. Association between Stress and Social Support Perceived among Undergraduate Health Sciences Student. *Malays J Med Sci.* 2023 Jun;30(3):176-183. doi: 10.21315/mjms2023.30.3.16. Epub 2023 Jun 27. PMID: 37425381; PMCID: PMC10325121.
12. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *J Health Soc Behav.* 1983;24(4):385-96.
13. Nivetha M., Bhavani, Mansoor Ahmed, and Prashantha B. Perceived stress and source of stress among undergraduate medical students of Government Medical College, Mysore. *Int J Community Med Public Health.* 2018. 5(8), 3513-18.
14. Shah M, Hasan S, Malik S, Sreeramareddy CT. Perceived stress, sources and severity of stress among medical undergraduates in a Pakistani medical school. *BMC Med Educ.* 2010 Jan 15;10:2. doi: 10.1186/1472-6920-10-2. PMID: 20078853; PMCID: PMC2820489
15. Al-Roomy M. Assessing the correlation between perceived stress and academic achievement among health sciences students. *Front Med (Lausanne).* 2026 Jan 9;12:1734838. doi: 10.3389/fmed.2025.1734838. PMID: 41585274; PMCID: PMC12827518.
16. Divya M, Navya C J, Vidhu M Joshy, Aswathy M G. Prevalence of perceived stress among first year undergraduate medical students of a private medical college, Thrissur, Kerala. *MIJOCM.* 2019; 11(3): 54-57.
17. Almojali AI, Almalki SA, Allothman AS, Masuadi EM, Alaqeel MK. The prevalence and association of stress with sleep quality among medical students. *J Epidemiol Glob Health.* 2017;7(3):169-174. Doi:10.1016/j.jegh.2017.04.005.
18. Anuradha R, Dutta R, Raja JD, Sivaprakasam P, Patil AB. Stress and Stressors among Medical Undergraduate Students: A Cross-sectional Study in a Private Medical College in Tamil Nadu. *Indian J Community Med.* 2017 Oct-Dec;42(4):222-225. doi: 10.4103/ijcm.IJCM_287_16. PMID: 29184323; PMCID: PMC5682722.
19. Acar, Rozan & Acan, Ece & Konak, Ozan & Basoglu, Ozen. (2025). Sleep Quality in Medical Students: Any Relationship with Fatigue Severity? *Sleep Epidemiology.* 6. 100126. doi:10.1016/j.sleepe.2025.100126.
20. Aslam M, Daud A, Khurshid L, Lodhi MN, Zahid N, Rai MA, and Khalid A. 2025. A Comprehensive Survey Report on Caffeine Effect on Academic Performance: Caffeine Effect On Academic Performance. *Diet Factor.* 6 (3): 22-26.