



A CROSS-SECTIONAL STUDY ON STRESS LEVELS AND COPING MECHANISMS AMONG FIRST-YEAR MBBS STUDENTS OF SRI AUROBINDO INSTITUTE OF MEDICAL SCIENCES, INDORE, MADHYA PRADESH.

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Abstract

Background : Medical students commonly experience stress due to heavy academic workload, frequent examinations, and adjustment to a new learning and living environment, particularly during the first year of MBBS.

Methods : A cross-sectional, questionnaire-based study was conducted among first-year MBBS students at Sri Aurobindo Institute of Medical Sciences (SAIMS), Indore, over 30 days. A structured questionnaire assessed demographic details, key stressors, perceived impact of stress on well-being/academics, coping mechanisms, and suggested institutional support using Likert-scale responses. **Results:** A total of 250 students participated; most were below 21 years with a near-balanced gender distribution and mixed residential status. Examination pressure (79.6% agreement) and difficulty managing lecture pace/volume (74.3%) were the most commonly reported stressors, while interpersonal relationship stress was least reported (25.3%). Stress was perceived to affect motivation and healthy lifestyle (65.7% each) and academic performance (64.5%), and was associated with physical symptoms such as headaches/fatigue (64.2%). Common coping strategies included hobbies/leisure activities (77.4%), talking to friends/family (74.0%), and physical exercise/yoga (69.8%), whereas relaxation techniques were less frequently used (35.8%).

Conclusion : First-year MBBS students reported high academic-related stress with perceived negative effects on concentration, motivation, academic performance, and well-being. Students mainly used adaptive coping strategies, but lower use of relaxation practices suggests a need for structured stress-management training. Early institutional supports such as mentoring, peer-support systems, study-skills inputs, and accessible counselling/wellness services are recommended to improve student well-being and resilience.

Keywords: *Perceived stress; Coping strategies; First-year MBBS; Academic stress; Medical students.*

Introduction

Stress is often defined as a condition of worry or mental tension that develops due to challenging circumstances and its effects are not only determined by the stressor but also the response and resources of the individual.[1] A competitive academic atmosphere, periodic examinations, bulky

syllabus and the pressure to succeed are some of the factors that increase stress levels among medical students especially in the first months of enrolling in medical school.[2] There has been evidence that psychological distress levels may develop significantly within approximately six months of medical school entry, which implies that initial exposure to the medical learning surroundings can be a major precipitant of the development of symptoms of stress disorder[3].

The 1st year MBBS year is different since it involves several simultaneous changes such as school to a professional course, new teaching learning practices, large quantity of study and, most importantly, new hostel living along with loss of family support systems to many students.[4] Once such demands are considered to be unpredictable or overwhelming, students are likely to have a lower level of well-being, sleeping problems, and poor concentration that could negatively impact learning and academic performance.[5] Because early academic experience and coping styles can influence future professional resilience, initial measurement of stress during the medical school years has an educational and community health significance.[6].

The theoretical models highlight the fact that stress is well connected with cognitive appraisal-the way an individual rates an occasion and the capacity to handle it-and coping is the cognitive and behavioural processes involved in dealing with situations that are perceived to be taxing. Strategies to cope are usually categorized into adaptive strategies (active problem-solving, planning, seeking support and positive reframing) and less useful or even maladaptive strategies (denial, behavioural disengagement and substance use), although any one strategy may be useful depending on the context and the length of time.[7] Thus, patterns of coping in combination with the levels of stress are more detailed than assessing stress alone, as two similarly stressed students may have dramatically different results based on their patterns of coping[8].

Some cross-sectional studies in medical education have documented that students often combine problem-oriented and emotion-oriented coping strategies, with relatively less use of avoidant strategies; although, this may differ across genders and year of training.[9] In medical education at the introductory level, understanding how much students depend on functional coping (e.g., planning, active coping, seeking instrumental or emotional support) or dysfunctional coping (e.g., denial, disengagement) can be used in the design of specific mentoring, counselling, and wellness programs.[10] The perceived stress Scale (PSS) that is a popular measure of perceived stress, could be adopted and used to measure stress among student groups in a standardized way. Likewise, structured measures to gauge coping could be done through structured measures like Brief COPE which was created to measure various coping responses effectively in the research protocols[9,10].

A cross-sectional study, among first-year MBBS students in SAIMS, Indore, is worthy of estimation of perceived stress burden, and recording of common coping strategies employed during the first year of training in the course. These findings can justify interventions to improve institution-level, including academic skills training, peer-support systems, and available mental health services, to enhance student well-being and adaptive coping in early careers in medicine.

Materials and Methods

It was a cross-sectional, questionnaire-based research study to determine the level of perceived stress and the coping strategies of first-year MBBS students of Sri Aurobindo Institute of Medical Sciences (SAIMS), Indore, Madhya Pradesh. The research employed quantitative study design and primary data collection was done through structured questionnaire that was distributed to students.

Study setting

The research was done at Sri Aurobindo Institute of medical science, indore, Madhya pradesh.

Population and sample size of study.

All participants were chosen as they were 250 first-year MBBS students (another 250 students were in the second year when the survey was conducted). The sample size of 250 was to give a representative description of the patterns of stress, their perceived effects, and how they coped with their situation among the target population.

Study duration

The data collection was to be done in 30 days

Questionnaire (study instrument).

A structured questionnaire with five sections (1) demographic (age group, gender, residential status; name optional), (2) sources of stress, (3) impact of stress, (4) coping mechanisms and (5) suggestions of support systems was used to collect data. The items that tested the sources of stress, the effects of stress, coping, and support-system suggestions were graded using a 5-point Likert scale that gave a response between strongly disagree and strongly agree. The questionnaire was able to capture the most important domains of academic workload, pace of lectures, practical/laboratory load, work-life balance, relation with colleagues and emotional exhaustion, physical symptoms, sleep, lifestyle, motivation and confidence and the perceived effects on focus, academic performance, emotional exhaustion, physical symptoms, sleep, lifestyle, motivation and confidence.

Data collection procedure

The structured questionnaire was used to conduct a survey of the participants in the specified 30-day period, where they were asked to record the perceived sources of stress, the perceived effects on their well-being/academics, how they coped with them (e.g., time management, relaxation strategies, social support, peer support, mentorship guidance, hobbies, exercise/yoga, the use of digital app/tools), and what they perceived they needed in terms of institutional support (e.g., counselling services, stress-management workshops, peer mentorship, flexible schedule, faculty approachability,

Results

A total of 250 first-year MBBS students participated in the study. The demographic characteristics revealed a predominantly young cohort with balanced gender distribution and varied residential arrangements.

Table 1: Demographic characteristics

Variable	Category	n	Percent
Age	Below 21 years	195	78.0
	21–25 years	55	22.0
Gender	Female	130	52.0
	Male	118	47.2
	Prefer not to say	2	0.8
Residential status	On campus (Hostel)	106	42.4
	Off-campus	77	30.8
	Living with family	67	26.8

A total of 250 first-year MBBS students participated in the study, with 78.0% below 21 years of age and 52.0% being female.

Table 2: Key sources of academic stress

Item	Disagree (%) n	Neutral (%) n	Agree (%) n	Total
I feel overwhelmed by the academic workload in my first year of MBBS.	12 (4.8)	65 (26.0)	173 (69.2)	250
The pace of lectures and the amount of material covered in class are difficult to manage.	24 (9.6)	40 (16.0)	186 (74.4)	250
Practical sessions and laboratory work add significant stress to my academic routine.	68 (27.2)	74 (29.6)	108 (43.2)	250
I find it challenging to balance my academic	28 (11.2)	61 (24.4)	161	250

responsibilities with personal life.			(64.4)	
Interpersonal relationships with peers and faculty are a source of stress.	109 (43.6)	78 (31.2)	63 (25.2)	250
The pressure to perform well in exams contributes significantly to my stress levels.	21 (8.4)	30 (12.0)	199 (79.6)	250
I feel stressed due to the expectations from my family regarding my academic performance.	56 (22.4)	51 (20.4)	143 (57.2)	250
Adjusting to the medical college environment has been stressful for me.	45 (18.0)	73 (29.2)	132 (52.8)	250

Exam pressure showed the highest agreement at 79.6%, followed by lecture pace at 74.4%, while interpersonal relationships had the lowest agreement at 25.2%.

Table 3: Stress related to ongoing academic demands

Item	Disagree n (%)	Neutral n (%)	Agree n (%)	Total
Stress negatively affects my ability to focus on my studies.	32 (12.8)	64 (25.6)	154 (61.6)	250
My academic performance is impacted by the stress I experience.	27 (10.8)	62 (24.8)	161 (64.4)	250
I often feel emotionally drained because of academic stress.	35 (14.0)	62 (24.8)	153 (61.2)	250
Stress has affected my physical health, such as causing headaches or fatigue.	34 (13.6)	56 (22.4)	160 (64.0)	250
I find it difficult to sleep properly due to academic stress.	66 (26.4)	68 (27.2)	116 (46.4)	250
Stress has impacted my ability to maintain a healthy lifestyle, including exercise and nutrition.	29 (11.6)	57 (22.8)	164 (65.6)	250
My motivation to study decreases when I feel stressed.	35 (14.0)	51 (20.4)	164 (65.6)	250
Stress has affected my confidence in handling academic challenges.	33 (13.2)	61 (24.4)	156 (62.4)	250

Academic performance impact reached 64.4% agreement, with lifestyle and motivation disruption both at 65.6%.

Table 4: Impact of stress on well-being

Item	Disagree n (%)	Neutral n (%)	Agree n (%)	Total
Stress has affected my physical health, such as causing headaches or fatigue.	34 (13.6)	56 (22.4)	160 (64.0)	250
I find it difficult to sleep properly due to academic stress.	66 (26.4)	68 (27.2)	116 (46.4)	250
Stress has impacted my ability to maintain a healthy lifestyle, including exercise and nutrition.	29 (11.6)	57 (22.8)	164 (65.6)	250

Physical health effects showed 64.0% agreement, lifestyle impact 65.6%, and sleep disturbance 46.4%.

Table 5: Impact of stress on academic performance

Item	Disagree n (%)	Neutral n (%)	Agree n (%)	Total
I feel stressed due to the expectations from my family regarding my academic performance.	56 (22.4)	51 (20.4)	143 (57.2)	250
My academic performance is impacted by the stress I experience.	27 (10.8)	62 (24.8)	161 (64.4)	250

My motivation to study decreases when I feel stressed.	35 (14.0)	51 (20.4)	164 (65.6)	250
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Motivation decline was reported by 65.6%, performance impact by 64.4%, and family expectations by 57.2%.

Table 6: Coping mechanisms used by students

Item	Disagree n (%)	Neutral n (%)	Agree n (%)	Total
I rely on time management techniques to cope with academic stress.	27 (10.8)	82 (32.8)	141 (56.4)	250
I use relaxation techniques such as deep breathing or meditation to manage stress.	83 (33.2)	77 (30.8)	90 (36.0)	250
Talking to friends and family helps me cope with academic challenges.	22 (8.8)	44 (17.6)	184 (73.6)	250
I find peer support groups helpful in managing stress.	37 (14.8)	72 (28.8)	141 (56.4)	250
I prefer seeking guidance from faculty or mentors when I feel stressed.	36 (14.4)	72 (28.8)	142 (56.8)	250
Engaging in hobbies or leisure activities helps me deal with stress.	15 (6.0)	42 (16.8)	193 (77.2)	250
Physical exercise, such as sports or yoga, is an effective way for me to reduce stress.	24 (9.6)	52 (20.8)	174 (69.6)	250
I use digital tools or apps to help manage my stress levels and stay organised.	76 (30.4)	69 (27.6)	105 (42.0)	250

Hobbies showed highest utilization at 77.2%, followed by social support at 73.6% and exercise at 69.6%, while relaxation techniques had the lowest agreement at 36.0%.

Discussion

The present study, conducted among 250 first-year MBBS students, describes a predominantly young cohort (majority <21 years), with near-balanced gender distribution and mixed residential status (hostel/off-campus/family). These baseline characteristics are important because the transition into medical school and relocation/hostel living can influence perceived stress and access to coping resources, as suggested in qualitative work describing workload and work–life balance concerns among medical students.

Regarding sources of academic stress, the findings show that examination pressure was the most strongly endorsed stressor, followed closely by difficulty managing the pace of lectures and the volume of material. This aligns with Tilwani et al,[11] who evaluated examination-related stress among first-year MBBS students and emphasized examination periods as important stress-provoking events early in medical training. The dominance of academic stressors in the present study is also consistent with Nebhinani et al,[12] who reported that academic aspects contributed the highest stress in first-year medical undergraduates, while social-related stress was comparatively lower. In contrast, interpersonal relationships with peers and faculty were the least endorsed source of stress in the current findings, which is similar to the pattern noted by Nebhinani et al,[12] where social-related stress was least prominent relative to academic stress.

The study also demonstrates that stress was not limited to subjective discomfort but was perceived to interfere meaningfully with learning-related outcomes, including concentration, academic performance, and confidence in handling academic challenges. Hill et al[13] described that medical student stressors are linked with adverse outcomes including somatic distress and poor academic performance, supporting the plausibility that perceived stress may translate into academic impairment. Nebhinani et al[12] also discussed the interlinkage of stress with burnout and coping, reinforcing that high stress in early MBBS may have broader educational and psychological consequences.

In terms of well-being, a majority of students reported physical symptoms (headaches/fatigue) and difficulty maintaining a healthy lifestyle, while sleep disturbance was reported by nearly half. Hill et al[13] similarly noted that stress exposure among medical students is associated with somatic complaints, which corresponds with the physical-symptom burden observed in the present sample. The lifestyle disruption observed here also fits with the commonly reported “lack of balance” and time pressure themes described by medical students in qualitative studies.

When the perceived academic impact is examined more specifically, the reported decline in motivation and perceived impact on academic performance were prominent, and more than half also reported stress related to family expectations. Hill et al[13] highlighted that non-academic pressures and the “need to succeed” are frequently described stressors by medical students, which conceptually aligns with perceived external expectations contributing to stress in the current cohort. These comparisons suggest that interventions should address both curriculum-linked pressures (assessment load, teaching pace) and contextual pressures (expectations, adjustment demands) that shape stress experience.

Coping mechanism findings indicate that students most often relied on hobbies/leisure activities, social support (talking to friends/family), and physical exercise, while relaxation techniques such as meditation/deep breathing were less commonly endorsed. Nebhinani et al[12] reported that most first-year medical students practiced active coping, which is broadly compatible with the present finding of frequent use of constructive strategies (activity-based coping, support-seeking) rather than exclusively avoidant responses. The relatively lower endorsement of formal relaxation practices in the current study may indicate a skills/training gap that could be addressed through structured stress-management workshops and campus wellness programming.

Overall, the results support multi-layered interventions focusing on academic supports (study skills, assessment planning, time management), psychosocial supports (peer groups, mentoring, counselling access), and health-promoting opportunities (sports/yoga, recreation). This approach is consistent with the broader literature emphasizing that academic overload, time pressure, and balance issues are key stressors and that strengthening coping resources may mitigate distress in medical students.

Conclusion- In this cross-sectional study of 250 first-year MBBS students, perceived stress was common and was mainly linked to examination pressure, fast lecture pace, and heavy academic workload. Stress was frequently reported to impair concentration, motivation, confidence, and perceived academic performance, along with physical symptoms and difficulty maintaining healthy routines. Most students reported using adaptive coping methods such as hobbies/leisure activities, social support, and physical exercise, while relaxation practices were comparatively less used. These findings highlight the need for early, multi-pronged institutional support—academic skills training, peer/mentor support, and accessible counselling and wellness services—to promote well-being and strengthen adaptive coping during the transition into medical school.

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