



STUDY OF STRESS, ANXIETY & DEPRESSION IN UNDERGRADUATE MEDICAL STUDENTS AT GOVERNMENT MEDICAL COLLEGE.

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Abstract

Background: A study based on Depression, Anxiety and Stress Score (DASS) among youngsters is crucial to understand their levels of depression, anxiety and stress. Conducting such studies is important due to the fast pace of life and behavioural changes in society, particularly among medical students who experience academic and social transition. The objective of this study was to assess the levels of DASS among first-year medical students and to compare DASS levels between male and female students. **AIMS and OBJECTIVES:** The study aims to assess levels and prevalence of depression, anxiety and stress among undergraduate medical students using the DASS-42 scale, and to examine their association with gender, socio-demographic factors and major sources of stress. **METHODOLOGY:** A total of 520 undergraduate medical students were included in the study. Data were collected using the pre-designed DASS-42 scale. The study was conducted in the Department of physiology at Rural Medical College. Data were analysed using descriptive statistics, and mean scores were calculated for depression, anxiety and stress. Chi-square test was applied to determine the association between gender and DASS categories. **RESULTS:** The major stressors were vast syllabus (67.3%), hostel food (55.8%), and homesickness (48.5%). Most had normal-mild levels of depression (64%), anxiety (62.9%), and stress (56.9%), though moderate-severe stress (43%) and anxiety (37%) were notable. Age was significantly associated with anxiety ($p=0.01$) and stress ($p=0.0001$). MBBS year and gender showed highly significant association with all DASS components ($p<0.001$), with higher anxiety and stress in final-year students and females. **CONCLUSION:** A considerable proportion of medical students experienced moderate to severe anxiety and stress, mainly due to academic and hostel-related factors. Higher levels were seen in senior students and females, highlighting the need for targeted mental health support in medical colleges.

Keywords: Depression, Anxiety, Stress, DASS score.



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INTRODUCTION

Medical education serves as a cornerstone for acquiring the knowledge, skills and professionalism required to become competent physicians. Students often grow up under constant care and guidance from parents, guardians and tutors until their teenage years, after which they enter medical college following competitive pre-medical examinations. In the Indian context, many students enroll in professional courses to fulfil the expectations and aspirations of their parents and families. Entering medical college marks a major transition, as students are exposed not only to academic pressure but also to emotionally intense experiences such as witnessing childbirth, recovery and patient deaths, which can contribute to emotional disturbances during the early phase of training¹.

Medical students have been reported to experience higher levels of psychological distress compared to their peers of the same age group¹². Factors such as a vast syllabus, intense peer competition, continuous examinations, staying away from home, adjusting to a new environment, language barriers and long training duration act as precipitating factors for stress, anxiety and depression³. The concept of stress was first defined by Hans Selye as “the non-specific response of the body to any demand for change”¹⁴. While a moderate level of anxiety may enhance performance and help students reach their potential, excessive anxiety can negatively affect academic performance⁵. Previous studies have reported a very high prevalence of stress among medical students, with contributors including examination pressure, large syllabus, unmet academic expectations, limited time for revision and procrastination⁶.

Uncontrolled stress, anxiety and depression can have serious long-term consequences on both personal and professional life⁵. Excessive stress is associated with physical and mental health problems, reduced self-esteem, sleep disturbances,

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impaired concentration, poor decision-making and interpersonal conflicts⁷⁻¹³. It may also adversely affect academic and clinical performance and reduce the ability to build effective relationships with patients^{10,14}. In severe cases, stress has been linked to substance abuse, alcohol use and even suicide among medical students¹⁵⁻¹⁸. Psychological morbidity among medical students remains a neglected issue in India despite the large number of medical institutions. Depression is a major contributor to suicide, which is the fourth leading cause of death among individuals aged 15–29 years¹⁹.

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Need for the study:

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MATERIALS AND METHODS

Study design: Cross-Sectional study.

Study setting: Rural Government Medical College

Study period: 3 Months (November 2025-january 2026)

Sample size: all Undergraduate students

Inclusion criteria: All undergraduate medical students from first to final MBBS and those who had given written Informed Consent.

Exclusion criteria:

Students with any diagnosed psychiatric disorders or Any self-reported physical illness or Those not willing to give consent

Data collection:

Ethical approval of the Institutional Human Ethics Committee was obtained.

DASS -42 questionnaire⁹ was given to the students in google form which was be used to assess the stress, anxiety and depression levels. All the students who gave the consent for the study was briefed about the questionnaire and their doubts was clarified. Among total of 600 medical students, 520 students participated in the study. Pre-designed scale (DASS scale 42) was used to collect the data. This study was be conducted at the Department of Physiology, Government Rural Medical College, Maharashtra, India. The analysis part composed of 2 parts, Descriptive and analytical part. Descriptive statistics such as frequency, percentage was applied for general characteristics, prevalence of stress and various factors responsible for stress. Analytical statistics such as Chi-square Test was used to determine the association between various stress factors and presence of stress.

RESULTS

Table 1: Demographic characteristics of the respondents (n = 520)

Variables		Frequency (n=520)	Percentage (%)
Age (Years)	≤20	182	35
	>20	338	65
sex	male	282	54.2
	Female	238	45.8
Occupation of mother	Business	40	7.7
	Govt. employee	55	10.8
	House wife	306	61
	PSU(Private)	17	3.3
	Farmer	102	20.3
Occupation of father	Business	184	36.7
	Govt. employee	98	19.5
	PSU(private)	105	20.9
	Farmer	115	22.9
Year of MBBS	1 st year	146	28.1
	2 nd year	130	25
	3 rd year(part-I)	128	24.6
	3 rd year(part-II)	116	22.3

Table 1: A total of 520 undergraduate medical students participated in the study. Most students were aged >20 years (65%) and were males (54.2%). The majority of mothers were homemakers (61%), while most fathers were engaged in business (36.7%). The highest participation was from first-year MBBS students (28.1%).

Table 2: Distribution of respondents according to their response towards Stress

Stress	yes		no	
	N	%	N	%
Vast syllabus	350	67.3	170	32.7
Problem understanding	180	34.6	340	65.4
Family issues	115	22.1	405	77.9
Good Relations with teachers	320	61.5	200	38.5
Financial issues	180	34.6	340	65.4
Hostel food	290	55.8	230	44.2
Lecture and practical	259	49.8	261	50.2
Good Relationship with friends	380	73.1	140	26.9
homesickness	252	48.5	268	51.5

Table 2: The most common stressor was the vast syllabus (67.3%), followed by hostel food (55.8%) and homesickness (48.5%). Stress related to lectures and practicals was reported by nearly half of the students (49.8%). Most students reported good relationships with friends (73.1%) and teachers (61.5%), while family issues (22.1%) were the least common stressor.

Table 3: Distribution of respondents according to their response towards DASS.

Response	Depression		Anxiety		Stress	
	N	%	N	%	N	%
Normal	192	36.9	165	31.7	176	33.8
Mild	141	27.1	162	31.2	120	23.1
Moderate	132	25.4	128	24.6	122	23.5
Severe	35	6.7	40	7.6	59	11.3
Extremely severe	20	3.8	25	4.8	43	8.2
Total	520	100	520	100	520	100

Table 3 Most participants had normal to mild levels of depression, anxiety, and stress. However, a considerable proportion experienced moderate to extremely severe symptoms, particularly for anxiety and stress, indicating a substantial burden of psychological distress among medical students.

Table 4: Age wise distribution of students according to their response towards DASS

variables		levels			Total	p-value
Depression		Normal to mild	moderate	Severe to extremely severe		
Age(years)	<20	120	45	17	182	0.7
	≥20	213	87	38	338	
total		333	132	55	520	
Anxiety						
Age(years)	<20	130	33	19	182	0.01
	≥20	197	95	46	338	
total		327	128	65	520	
Stress						
Age(years)	<20	125	35	22	182	0.0001
	≥20	171	87	80	338	
total		296	122	102	520	

Table 4 There was no significant association between age and depression ($p = 0.7$). However, anxiety ($p = 0.01$) and stress ($p = 0.0001$) were significantly higher among students aged ≥ 20 years.

Table 5: MBBS year wise distribution of students according to their response towards DASS

Variable	MBBS Year	Normal to Mild	Moderate	Severe to Extremely Severe	Total	p-value
Depression	1st Year	123	10	13	146	
	2nd Year	55	50	25	130	
	3rd Year	65	56	7	128	
	4th Year	90	16	10	116	
	Total	333	132	55	520	<0.001
Anxiety	1st Year	122	15	9	146	
	2nd Year	65	55	10	130	
	3rd Year	80	38	10	128	
	4th Year	60	20	36	116	
	Total	327	128	65	520	<0.001
Stress	1st Year	120	18	8	146	
	2nd Year	75	45	10	130	
	3rd Year	56	45	27	128	
	4th Year	45	14	57	116	
	Total	296	122	102	520	<0.001

Table 5: A statistically highly significant association was observed between MBBS year and depression, anxiety, and stress (all $p < 0.001$). Moderate depression was highest among 2nd- and 3rd-year students, while severe anxiety and stress were most common among 4th-year students. First-year students predominantly had normal to mild symptoms.

Table 6: Gender distribution of students according to their response towards DASS

variables		levels			Total	p-value
Depression		normal	mild	Severe/extremely severe		
Gender	male	201	45	36	282	<0.001
	female	132	87	19	238	
total		333	132	55	520	
Anxiety						
Gender	male	230	35	17	282	<0.001
	female	97	93	48	238	
total		327	128	65	520	
Stress						
Gender	male	190	60	32	282	<0.001
	female	106	62	70	238	
total		296	122	102	520	

Table 6: statistically highly significant association was observed between gender and depression, anxiety, and stress (all $p < 0.001$). Female students exhibited higher levels of anxiety and stress, while males were more likely to have normal scores across all three domains.

DISCUSSION

The present study assessed the prevalence of depression, anxiety, and stress among undergraduate medical students and examined the influence of demographic and academic factors on psychological well-being. The findings demonstrate that psychological distress is common among medical students, with academic burden emerging as the predominant stressor.

Prevalence of Depression, Anxiety and Stress

In the present study, 36.9% of students had normal depression scores, while 63.1% exhibited varying degrees of depressive symptoms. Similarly, 68.3% of students experienced some degree of anxiety and 66.2% reported varying levels of stress. Although the majority of participants had normal-to-mild symptoms, a considerable proportion experienced moderate to extremely severe psychological distress, particularly anxiety and stress. These findings are comparable with the systematic review by Rotenstein et al., which reported a pooled prevalence of depression or depressive symptoms of 27.2% among medical students worldwide, emphasizing that psychological morbidity is substantially higher in medical students than in the general population.²⁰ Likewise, Iqbal et al. reported high rates of depression, anxiety, and stress among medical students and attributed these findings to intense academic pressure, prolonged study hours, and concerns regarding academic performance.²¹ Medical students are particularly susceptible to psychological distress because of continuous examinations, extensive curriculum, clinical responsibilities, sleep deprivation, limited leisure time, and intense competition. Persistent

exposure to these stressors activates the hypothalamic-pituitary-adrenal (HPA) axis, leading to sustained cortisol secretion and dysregulation of neurotransmitters such as serotonin and norepinephrine, thereby increasing the risk of anxiety, stress, and depressive symptoms.

Academic Stressors

The present study identified the vast syllabus (67.3%) as the most common stressor, followed by hostel food (55.8%) and homesickness (48.5%). These findings are consistent with the study by Kumar et al., who reported that an overloaded curriculum, frequent examinations, and lack of adequate study time were the major sources of stress among Indian medical students.²² Similar observations were also made by Sreeramareddy et al., who found that academic-related stressors were the strongest predictors of psychological distress in medical students.²⁴ Medical education requires students to master a large amount of theoretical and clinical knowledge within a limited time, often resulting in inadequate sleep, reduced physical activity, and emotional exhaustion. Homesickness may further contribute to stress by reducing emotional support and impairing adaptation to hostel life, while dissatisfaction with hostel food may adversely affect nutrition, physical health, and overall quality of life.

Association with Age

Age was not significantly associated with depression ($p=0.7$), whereas significant associations were observed for anxiety ($p=0.01$) and stress ($p=0.0001$), with higher levels among students aged ≥ 20 years. This finding is in agreement with Bayram and Bilgel, who reported increasing psychological distress with advancing age and academic progression among university students.²³ Older students generally encounter greater academic responsibilities, prolonged clinical postings, increasing patient care responsibilities, and concerns regarding postgraduate entrance examinations, all of which may contribute to higher anxiety and stress levels.

Association with MBBS Year

A highly significant association was observed between MBBS year and depression, anxiety, and stress ($p<0.001$). Moderate depression was more common among second- and third-year students, whereas severe anxiety and stress were highest among fourth-year students.

The higher psychological distress among senior students is likely related to increasing clinical exposure, professional responsibilities, frequent assessments, and pressure to secure postgraduate training. These findings are consistent with Dyrbye et al., who demonstrated that psychological distress tends to increase as students advance through medical education because of cumulative academic and clinical demands.¹ Similar observations have also been reported by Iqbal et al., who found significantly higher anxiety among students in senior academic years.²¹ Interestingly, first-year students in the present study also demonstrated considerable anxiety despite having comparatively lower levels of severe stress. This may reflect the challenges associated with transition from school to medical college, adjustment to a new learning environment, separation from family, hostel accommodation, language barriers, unfamiliar teaching methods, and fear of academic failure. The abrupt shift from structured school education to self-directed learning often results in uncertainty and performance anxiety during the initial months of medical education. However, the absence of substantial clinical responsibilities may explain the relatively lower levels of severe stress compared with senior students.

Gender Differences

Gender was significantly associated with depression, anxiety, and stress ($p<0.001$). Female students experienced higher levels of anxiety and severe stress than males.

These findings are consistent with those reported by Bayram and Bilgel and Iqbal et al., who observed significantly higher psychological distress among female medical students.^{21,23} Several mechanisms may explain this difference. Biological factors, including hormonal fluctuations involving estrogen and progesterone, influence serotonergic and GABAergic neurotransmission, increasing susceptibility to anxiety and mood disorders. In addition, psychosocial factors such as greater emotional responsiveness, higher perceived academic expectations, social pressures, and greater willingness to acknowledge psychological symptoms may contribute to the higher prevalence observed among female students.

Overall Interpretation

The findings of the present study reinforce existing evidence that medical students experience a substantial burden of psychological distress, largely driven by academic workload, transition-related challenges, and increasing clinical responsibilities. The similarity of these findings with national and international studies indicates that psychological morbidity among medical students is a widespread concern rather than an isolated institutional issue. Early identification of students at risk, regular mental health screening, accessible counselling services, mentorship programmes, stress-management training, and curriculum modifications aimed at reducing unnecessary academic burden may help improve students' psychological well-being and academic performance.

CONCLUSION

Female students experienced significantly higher anxiety and stress than males, while anxiety and stress were also more common among students aged ≥ 20 years. Psychological distress increased with advancing MBBS year, with severe anxiety and stress being highest among fourth-year students. Overall, academic burden, progression through medical training, and female gender emerged as important determinants of psychological distress, emphasizing the need for regular mental health screening, counselling services, and supportive academic environments for medical students.

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