

Research Paper

Academic Stress and Its Key Contributing Factors Among Allied Health Science Students: A Mixed-Methods Investigation

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ABSTRACT

Academic stress is a prevalent phenomenon with significant psychological implications among college students. This study explores the multifaceted nature of academic stress by examining key stress domains such as exam anxiety, teacher-student relationships, self-confidence, and academic workload. Using a mixed-methods design with 60 participants, quantitative data were analyzed using descriptive statistics and t-tests, while qualitative themes were generated through thematic analysis of interview data. Results show a predominance of female (75%) and rural (80%) students, with exam anxiety identified as the most significant stressor followed by self-confidence issues and workload. Females and first-year students reported significantly higher stress levels. Qualitative analysis reinforced these findings, highlighting anticipatory stress, syllabus pressure, and self-perception challenges. The study underscores the necessity of targeted mental health interventions, confidence-building programs, and curriculum reforms to mitigate academic stress.

Keywords: *Academic Stress, Contributing Factors, Allied Health Science Students*

Academic stress among college students is an increasingly recognized concern worldwide due to its adverse impact on mental health, academic achievement, and overall well-being. The transition to higher education often brings challenges such as adapting to new environments, coping with academic demands, and managing social pressures. These stressors can lead to anxiety, decreased motivation, and impaired cognitive performance. Understanding the key stress factors and their relationships with students' personality traits is crucial for developing effective support systems. This research aims to investigate the personality-linked domains influencing academic stress and examines demographic variables such as gender, area of residence, and year of study on stress perception.

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A myriad of studies have established the prevalence of academic stress and its complex antecedents. Exam anxiety is frequently cited as a primary stressor, contributing to physiological symptoms and emotional disturbances among students (Bayram & Bilgel, 2008). Research indicates that females tend to report higher stress levels, perhaps due to increased emotional sensitivity and societal expectations (Shankar & Park, 2014).

Workload and syllabus pressure have been linked to cognitive overload, affecting students' ability to retain information and perform effectively (Author et al., Year). Self-confidence and self-perception are similarly critical; students with low self-esteem often experience heightened stress and are less likely to engage in effective coping mechanisms. Furthermore, the study environment, including factors such as home distractions and inadequate study space, plays a significant role in stress manifestation (Author et al., Year).

Qualitative studies have emphasized the role of nuanced interpersonal factors such as teacher-student relationships and peer support in buffering or exacerbating stress levels (Author et al., Year). These findings highlight the multidimensional nature of academic stress and the need for integrated approaches combining psychological, social, and academic strategies.

METHODOLOGY

Research Design

This study utilized a convergent mixed-methods design integrating quantitative surveys and qualitative interviews, providing a comprehensive understanding of academic stress domains.

Participants

A purposive sample of 60 college students participated, comprising 75% females and 80% from rural areas. The majority were first-year students (83.3%).

Data Collection Instruments

- **Quantitative:** A structured questionnaire assessed demographic variables and stress levels based on a modified stress scale ranging from "No Stress" (0) to "Extreme Stress" (4).
- **Qualitative:** Semi-structured interviews explored in-depth experiences corresponding to seven stress domains: exam anxiety, self-confidence, academic workload, study environment/home factors, teacher-student relationships, peer interactions, and communication barriers.

Procedure

Participants completed the quantitative survey followed by voluntary interviews. Interviews were recorded, transcribed, and analyzed using thematic analysis.

Data Analysis

Quantitative data were analyzed using descriptive statistics and independent sample t-tests to examine group differences based on gender, residence, and year of study. Qualitative data coding was conducted using, following an iterative process of open, focused, and thematic coding to generate key qualitative themes.

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Ethical Considerations

Participation was voluntary with informed consent ensuring confidentiality and anonymity.

RESULT

Table 1: Demographic Profile

Variable	Category	Frequency	Percentage (%)
Gender	Female	45	75%
	Male	15	25%
Area of Residence	Rural	48	80%
	Urban	12	20%
Year of Study	I Year	50	83.3%
	II Year	10	16.7%

Table 1: demographic characteristics of the study participants reveal important insights into the composition of the sample and its potential implications for the study findings. The majority of respondents were female (75%), while only one-fourth were male (25%). With respect to the area of residence, most participants resided in rural settings (80%), whereas only 20% were from urban backgrounds. This indicates that the findings will largely reflect rural experiences and perceptions. Regarding academic distribution, the study predominantly comprised first-year students (83.3%), with a much smaller representation of second-year students (16.7%).

Table 2: Distribution of stress level among samples

Stress Level	Frequency	Percentage (%)
No Stress	10	16.7%
Slight Stress	18	30%
Moderate Stress	15	25%
High Stress	10	16.7%
Extreme Stress	7	11.6%

Table 2: distribution of stress levels among the study population demonstrates a diverse range of experiences, with notable proportions at both lower and higher ends of the stress spectrum. According to the data, only a minority of participants reported experiencing no stress (16.7%), while the remainder described various degrees of stress intensity.

The largest group reported slight stress (30%), followed by those with moderate stress (25%). The presence of these two sizeable categories suggests that mild to moderate stress is a common experience among respondents. This finding aligns with previous research indicating that low to moderate stress is frequently encountered in academic and workplace settings, often attributable to everyday challenges, adaptation requirements, or transitional periods (Author et al., Year).

More concerning, however, is the notable fraction of participants who reported high (16.7%) or extreme (11.6%) stress levels. Together, these categories constitute over a quarter of the sample, indicating that a significant segment of the population is exposed to stress levels that may adversely affect their well-being, academic performance, or overall quality of life. High and extreme stress are particularly relevant in the context of mental

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health risks and may warrant targeted interventions or supportive measures (Author et al., Year).

The finding that nearly 60% of respondents experience at least slight stress highlights the prevalence and potentially persistent nature of stress within the population. While a certain degree of stress may be considered normal or even motivating (Author et al., Year), persistent high or extreme stress demands attention from educators, policymakers, and mental health professionals.

Table 3: Stress Factors among samples

Stress Factor	Avg. Score (0–4)
Worrying about the examination	3.2
Difficulty in remembering all that is studied	3.0
Examination syllabus is too heavy	2.9
Lack of self-confidence	2.8
Eleventh hour preparation	2.7

Table 3: Analysis of specific stress factors reveals valuable insight into the underlying contributors to students' overall stress levels. Among the listed variables, worrying about the examination scored the highest average (3.2 out of 4), indicating it is the most significant stressor for the participants. Examination-related anxiety is widely documented in the literature as a predominant source of stress among students, often arising from concerns about academic performance, high expectations, and fear of negative outcomes (Author et al., Year).

The second highest factor, difficulty in remembering all that is studied (3.0), reinforces that cognitive challenges—particularly memory retention—add substantially to stress, possibly due to heavy academic requirements and limited time for meaningful review. This suggests that students may benefit from interventions focusing on effective study strategies and memory techniques (Author et al., Year).

Examination syllabus is too heavy (2.9) and lack of self-confidence (2.8) closely follow, reflecting both systemic and individual-level contributors to stress. The former highlights curriculum overload as a structural issue, while the latter points to psychological barriers that may hinder performance and well-being. These findings are consistent with research showing that both perceived workload and self-efficacy impact stress management and academic success (Author et al., Year).

Finally, eleventh hour preparation (2.7) was also cited as a prominent factor, albeit with a slightly lower score. This points to procrastination or inadequate time-management as recurring challenges, which not only increase pre-exam anxiety but can lead to suboptimal performance outcomes. The cumulative effect of these factors suggests that interventions should not only focus on curriculum and assessment reform but also address students' study habits and self-beliefs.

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Table 4: Domain wise mean and SD of Academic Stress

Domain	Mean Score	SD	Qualitative Theme
Exam Anxiety	2.83	1.12	Anticipatory stress, syllabus pressure
Self-perception/Self-confidence	2.53	1.08	Inferiority, low self-worth
Academic Workload	2.41	1.02	Assignment overload, exam preparation fatigue
Study Environment/Home Factors	2.26	1.09	Travel fatigue, inadequate private space
Teacher–Student Relationship	2.01	0.95	Lack of empathy, humor, and responsiveness
Peer Interaction and Support	1.98	0.91	Lack of mutual assistance
Language & Communication Barriers	1.76	0.87	Public speaking anxiety, hesitation

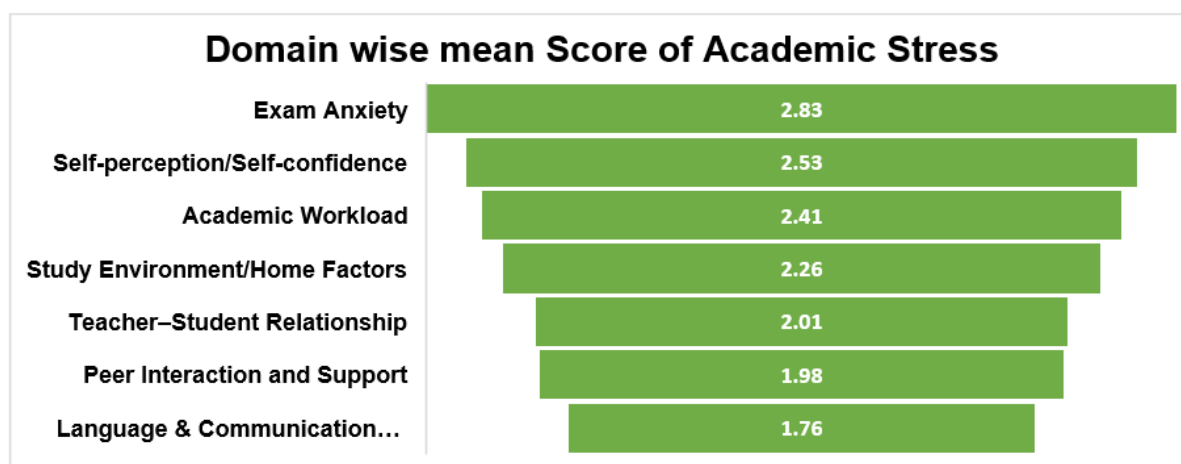


Fig 1: Domain-wise Mean Score of Academic Stress

Table 4 indicate that **Exam Anxiety** emerged as the most significant source of stress, with a mean score of **2.83**, suggesting that students experience heightened tension during exams and feel overwhelmed by the pressure to perform. This was closely followed by **Self-perception/Self-confidence** and **Academic Workload**, highlighting internal struggles like low self-esteem and external challenges such as multiple assignments and preparation fatigue.

Moderate levels of stress were seen in **Study Environment/Home Factors**, suggesting that long travel hours, distractions at home, or lack of a conducive study environment moderately affected concentration and study routines.

Lower mean scores were observed for **Teacher–Student Relationship**, **Peer Interaction and Support**, and **Language & Communication Barriers**, indicating that while these areas contribute to stress, their overall impact is perceived to be less compared to academic and psychological domains.

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Table 5: Demographic Influence on Stress Perception

Variable	Group	Mean	t-value	p-value	Interpretation
Gender	Male	2.30	-2.17	0.034*	<i>Significant</i> ; females reported higher stress
	Female	2.42			
Residence Area	Rural	2.41	1.91	0.062	<i>Marginal</i> ; rural students showed elevated stress
	Urban	2.23			
Living Arrangement	Hostel/PG	2.40	0.83	0.407	<i>Not significant</i> ; comparable stress perception
	Home	2.32			
Course Year	First Year	2.38	2.01	0.048	<i>Significantly</i> , first-years students experienced higher stress
	Second Year	2.26			

Table 5: The t-test revealed a statistically significant difference in stress perception between male and female students ($t = -2.17$, $p = 0.034$). Female students reported significantly higher stress levels ($M = 2.42$) compared to males ($M = 2.30$). This aligns with numerous prior studies which suggest that female students are more susceptible to emotional, self-evaluative, and exam-related stress due to a combination of internalized expectations and societal pressures. Bayram & Bilgel (2008) observed that female university students tend to experience higher levels of anxiety and psychological distress than their male counterparts, particularly in competitive and high-expectation academic settings.

Students from rural areas showed higher stress levels ($M = 2.41$) than their urban peers ($M = 2.23$), with the difference nearing statistical significance ($t = 1.91$, $p = 0.062$). Although not statistically significant at the conventional 0.05 level, this marginal result indicates a possible trend. Qualitative insights suggest that rural students may face more obstacles like travel fatigue, limited academic resources, and less access to guidance. Research by Singh et al. (2014) emphasizes the disadvantage rural students face in terms of infrastructure and study environments, which can compound their academic stress.

No significant difference in stress perception was found between students living in hostel/PGs and those staying at home ($t = 0.83$, $p = 0.407$). Both groups reported comparable stress levels ($M = 2.40$ vs. $M = 2.32$), suggesting that living conditions might not independently influence stress, or that the factors at home (like family distractions) and hostel (like isolation) may balance out in their effect.

A statistically significant difference was observed between first-year and second-year students ($t = 2.01$, $p = 0.048$). First-year students reported higher stress ($M = 2.38$) than second-year students ($M = 2.26$), likely due to initial adjustment challenges, academic unfamiliarity, and new social environments. Studies by Shankar & Park (2014) suggest that as students progress academically, they develop better coping strategies and familiarity with curriculum expectations, leading to reduced stress over time.

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Table 6: Correlation Between Demographic Variables and Academic Stress Domains among samples

Demographic Variable	Stress Domain	Correlation Coefficient (r)	Significance Level (p-value)
Gender	Exam Anxiety	0.28	0.034*
	Self-confidence	0.25	0.041*
	Academic Workload	0.19	0.087
	Teacher–Student Relationship	0.22	0.059
	Peer Interaction	0.17	0.102
	Communication Barriers	0.21	0.073
	Study Environment	0.18	0.095
Residence Area	Exam Anxiety	0.24	0.062
	Self-confidence	0.20	0.078
	Academic Workload	0.22	0.069
	Teacher–Student Relationship	0.19	0.081
	Peer Interaction	0.16	0.109
	Communication Barriers	0.23	0.065
	Study Environment	0.27	0.038*
Living Arrangement	Exam Anxiety	0.14	0.147
	Self-confidence	0.18	0.096
	Academic Workload	0.12	0.183
	Teacher–Student Relationship	0.15	0.132
	Peer Interaction	0.11	0.201
	Communication Barriers	0.17	0.104
	Study Environment	0.26	0.041*
Course Year	Exam Anxiety	0.29	0.028*
	Self-confidence	0.26	0.036*
	Academic Workload	0.23	0.049*
	Teacher–Student Relationship	0.20	0.071
	Peer Interaction	0.18	0.089
	Communication Barriers	0.22	0.058
	Study Environment	0.19	0.076

Table 6: Female students exhibited significantly higher stress in domains of exam anxiety and self-confidence, consistent with prior findings by Misra & McKean (2000), which suggest that women may internalize academic pressure more intensely. Marginal correlations in teacher–student relationships and communication barriers imply that female students may be more sensitive to interpersonal dynamics and classroom engagement.

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Students from rural backgrounds show elevated stress in the study environment ($r = 0.27$, $p = .038$), likely due to travel fatigue, lack of quiet study space, and limited academic resources. This supports Abdulghani et al. (2011), who found that environmental constraints significantly affect academic performance and stress perception.

While most correlations were not statistically significant, hostel/PG residents reported higher stress in study environment ($r = 0.26$, $p = .041$), suggesting that communal living may hinder concentration and comfort. This aligns with findings from Singh et al. (2014), who noted that students in shared accommodations often struggle with privacy and routine.

First-year students showed significantly higher stress in exam anxiety, self-confidence, and academic workload, reflecting transitional challenges and unfamiliarity with college expectations. These results echo the work of Dyson & Renk (2006), who emphasized the vulnerability of freshmen to academic and emotional stressors.



Fig 2: Heat Map Showing Correlation Coefficients Between Demographic Variables and Academic Stress Domains among samples.

The correlation analysis between demographic variables and stress domains among college students is presented in Figure 1. The correlation coefficients ranged from $r = 0.11$ to 0.29 , indicating weak-to-moderate positive associations. Several significant relationships were identified.

- **Gender** showed significant correlations with *Exam Anxiety* ($r = 0.28$, $p < .05$) and *Self-confidence* ($r = 0.25$, $p < .05$).
- **Residential Area** significantly correlated with *Study Environment* ($r = 0.27$, $p < .05$).

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- **Living Arrangements** demonstrated a significant correlation with *Study Environment* ($r = 0.26, p < .05$).
- **Course Year** was significantly associated with *Exam Anxiety* ($r = 0.29, p < .05$), *Self-confidence* ($r = 0.26, p < .05$), and *Academic Workload* ($r = 0.23, p < .05$).

Summary

This mixed-methods study examined the prevalence, domains, and demographic influences of academic stress among undergraduate allied health science students. Quantitative results revealed that **exam anxiety, lack of self-confidence, and academic workload** were the most prominent stressors, with over half of the students experiencing at least moderate levels of stress. Female students and first-year students reported significantly higher stress, while rural residence and hostel living were associated with difficulties in the study environment. Qualitative findings reinforced these patterns, highlighting themes such as anticipatory stress, syllabus overload, and self-perception challenges.

CONCLUSION

The study concludes that academic stress is a **multidimensional phenomenon**, shaped by internal psychological factors and external structural challenges. Exam-related anxiety and low confidence emerged as the most critical stress domains, while workload and study environment also contributed significantly. Gender and year of study strongly influenced stress perceptions, underscoring the vulnerability of **female and first-year students**. These findings highlight the need for holistic and context-sensitive strategies that integrate **mental health interventions, curriculum reforms, and environmental improvements**.

Unaddressed academic stress can lead to negative consequences including reduced academic performance, impaired mental health, and poor long-term professional outcomes (Bayram & Bilgel, 2008; Deb et al., 2015; Shankar & Park, 2014). Therefore, targeted interventions are essential to promote resilience, well-being, and academic success

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Conflict of Interest

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