

Research Paper

Academic Stress Among College Students in Kerala: A Statistical Analysis

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ABSTRACT

This study explores academic pressure and stress among college students in Thrissur, Kerala—a region known for its competitive academic environment. Using primary data from questionnaires administered across diverse academic programs, the research examines stress in relation to gender, employment, food habits, and access to mental health support based on institutional type. It also analyses the link between sleep duration and time spent on coursework. Data were analysed using frequencies, graphical methods, and chi-square tests in R Studio. The findings aim to guide educational institutions and policymakers in developing student-centered interventions that support both academic performance and mental well-being.

Keywords: *Academic Stress, Student Mental Health, College Students, Stress Management, Statistical Analysis, Psychological Well-being*

Academic pressure and stress have become growing concerns among college students, as they are increasingly required to meet high academic expectations while managing coursework, examinations, and various responsibilities. This pressure, often stemming from institutional demands, personal ambition, and societal expectations, can significantly affect students' mental and physical well-being. As the academic environment becomes more competitive, students frequently find themselves balancing multiple roles, leaving little room for relaxation, social engagement, or personal development.

Several factors contribute to academic stress, including tight deadlines, the pursuit of high grades, peer competition, financial constraints, and the need to maintain a well-rounded academic profile through internships, part-time jobs, and extracurricular activities. Additionally, the growing influence of digital platforms and social media has introduced new challenges, as students are continually exposed to peer accomplishments, academic comparisons, and societal standards. This constant exposure can result in feelings of inadequacy, low self-esteem, and increased anxiety (Gong et al., 2023).

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Received: April 09, 2025; Revision Received: June 13, 2025; Accepted: June 16, 2025

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Beyond academics, students face stressors in their social and personal lives. Relationship issues, family expectations, and emotional conflicts can further strain their mental health and impact academic performance. Lifestyle habits such as irregular sleep, poor nutrition, and lack of time management also contribute to higher stress levels. These interconnected challenges often lead to anxiety, depression, burnout, and reduced academic efficiency (Anitha & Ravi, 2020; Baiju & Rajalakshmi, 2021).

Understanding the complex causes and consequences of academic stress is essential in developing effective support systems for students. Previous studies have shown that students in demanding fields such as science and engineering report higher stress levels compared to their peers in other disciplines, indicating discipline-specific variations in stress experiences (Vijayashree & Srinivasa, 2018). Other research has identified academic overload, insufficient study time, low motivation, and pressure from family as major sources of stress, with fear of failure being especially prevalent among undergraduate students (Dimitrov, 2013; Reddy, Menon & Thattil, 2018). Academic stress has also been shown to vary based on educational level, with higher secondary students also experiencing similar psychological burdens (Laldikpuii & Vijayan, 2023).

Moreover, academic stress is a universal issue, transcending cultures and educational systems. It has been recognized as a significant factor affecting student well-being, academic performance, and overall life satisfaction. Recent studies emphasize the importance of psychological resilience and the development of coping strategies as essential tools for managing academic stress and preventing burnout (Gong et al., 2023).

This study aims to analyse academic stress among college students by exploring various influencing factors such as gender, employment status, food habits, sleep patterns, and the availability of mental health support. By examining the relationship between these variables and stress levels, the study seeks to generate insights that can inform the development of supportive educational practices and institutional policies. It also aims to raise awareness among educators, parents, and policymakers about the importance of promoting mental well-being alongside academic achievement, ultimately contributing to a more balanced and student-centered learning environment.

METHODOLOGY

This study adopts a quantitative research design using primary data to examine academic pressure and stress among college students in Kerala. A structured questionnaire was developed to collect data from a sample of 300 students, aged 17 to 26 years, enrolled in various undergraduate and postgraduate academic programs across arts, science, medical, and nursing colleges. The questionnaire captured demographic details along with variables related to academic workload, sleep duration, food habits, coping strategies, mental health status, and access to institutional counselling services. The design of the survey aimed to ensure clarity, relevance, and reliability of responses. Data were analysed using descriptive statistical methods, including frequency distributions and graphical representations to summarize the key characteristics of the sample. Additionally, Pearson's Chi-square test was employed to assess associations between categorical variables such as gender and mental health issues, employment status and stress, type of institution and counselling availability, and others. All statistical analyses and visualizations were conducted using R Studio, an integrated development environment (IDE) for the R programming language, which facilitated efficient data handling and hypothesis testing. This methodological approach

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allowed for an in-depth understanding of the patterns and factors influencing academic stress, offering insights for interventions at both institutional and policy levels.

Interpretation of Demographic Profile

Table 1: Students' Demographic Details

Socio-demographic Profile (n = 300)	
Gender	Male: 52.0% (n = 156) Female: 48.0% (n = 144)
Age	17–18 years: 15.3% (n = 46) 19–22 years: 71.0% (n = 213) 23–26 years: 13.3% (n = 40)
Type of Educational Institution	Aided: 45.3% (n = 136) Government: 28.7% (n = 86) Private: 26.0% (n = 78)
Accommodation	Day Scholar: 59.0% (n = 177) Hosteller: 41.0% (n = 123)
Employment Status	Part-time Employed: 14.0% (n = 42) Unemployed: 86.0% (n = 258)

Table 1 outlines the demographic composition of the study sample consisting of 300 college students from Thrissur District. The gender distribution is nearly even, with a slightly higher percentage of males. A majority of participants fall in the age range of 19–22 years, representing typical undergraduate college demographics. Most students are enrolled in aided institutions and live as day scholars. The majority of the students are not employed, which is consistent with the typical academic status of full-time students.

ANALYSIS OF DATA AND INTERPRETATION

This section presents a detailed analysis of the collected data, focusing on various aspects of academic pressure, stress, and coping strategies among college students. The analysis includes frequency distributions and graphical representations, offering insights into students' sleep habits, academic workload, stress management practices, and mental health status.

Sleeping Patterns

Among the respondents, a majority (45%) reported sleeping for 6–8 hours per night, followed closely by 42% who sleep 4–6 hours. However, 11.3% indicated they sleep less than 4 hours, suggesting a segment of students with potentially unhealthy sleep routines. Only 1.7% reported sleeping more than 8 hours, highlighting that most students fall short of recommended sleep duration for young adults.

Interpretation: Reduced sleep duration may be linked with increased academic workload and stress, which can further impact attention, memory, and emotional regulation.

Table 2: Sleeping Hours

Category	Frequency (n)	Percentage (%)
Less than 4 hours	34	11.3%
4–6 hours	126	42.0%
6–8 hours	135	45.0%
More than 8 hours	5	1.7%



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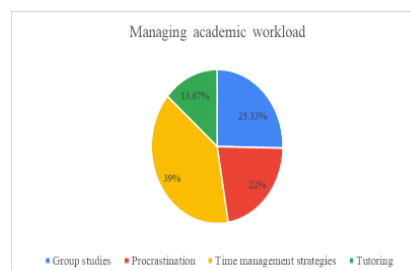
Academic Workload Management

When asked about strategies used to manage academic workload, 39% of students reported using time management strategies, 25.3% engaged in group studies, 22% admitted to procrastination, and 13.7% relied on tutoring.

Interpretation: While a large portion of students show awareness of effective planning, procrastination still affects a notable number, indicating a need for training in self-regulation and discipline.

Table 3: Managing Academic Workload

Category	Frequency (n)	Percentage (%)
Group studies	76	25.3%
Procrastination	66	22.0%
Time management strategies	117	39.0%
Tutoring	41	13.7%



Coping with Academic Stress

Socializing with friends (52.7%) was the most preferred coping mechanism, followed by eating favourite food (33.7%), traveling (33%), and exercising (25%). A smaller number reported practicing yoga (15.3%) or meditation (15.3%).

Interpretation: Most students lean toward social and behavioural coping strategies, while fewer adopt wellness or mindfulness practices. Encouraging healthy coping mechanisms may improve student resilience.

Table 4: Coping Strategies

Category	Frequency (n)	Percentage (%)
Yoga	46	15.3%
Meditation	46	15.3%
Exercise	75	25.0%
Travel	99	33.0%
Eating favorite food	101	33.7%
Socializing with friends	158	52.7%
Others	9	3.0%



Time Spent on Coursework

Most students (40.3%) spend 5–10 hours per week on coursework. A significant portion (29%) spend less than 5 hours, while 24.3% dedicate 11–15 hours.

Interpretation: The time spent varies widely, and those spending lesser hours may be at risk of falling behind, while those investing more time may be prone to burnout, especially if not balanced with adequate rest.

Table 5: Coursework Hours

Category	Frequency (n)	Percentage (%)
Less than 5 hours	87	29.0%
5–10 hours	121	40.3%
11–15 hours	73	24.3%
16–20 hours	15	5.0%
More than 20 hours	4	1.3%



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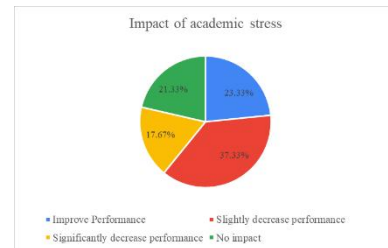
Impact of Academic Stress on Performance

Stress slightly decreased the academic performance of 37.3% of students and significantly decreased performance for 17.7%. Meanwhile, 23.3% felt their performance improved under pressure.

Interpretation: While some students may thrive under stress, most experience a decline in academic performance, showing that chronic academic pressure is generally detrimental.

Table 6: Academic Stress Impact

Category	Frequency (n)	Percentage (%)
Improve performance	70	23.3%
Slightly decrease	112	37.3%
Significantly decrease	53	17.7%
No impact	64	21.3%



Stress-Related Eating Habits

Stress eating was prevalent among respondents: 23% reported overeating often and 14.7% always, while only 14% reported never experiencing stress-related overeating.

Interpretation: Emotional eating is a common coping behaviour, which may lead to unhealthy physical outcomes over time.

Table 7: Stress-Related Overeating

Category	Frequency (n)	Percentage (%)
Never	42	14.0%
Rarely	91	30.3%
Sometimes	54	18.0%
Often	69	23.0%
Always	44	14.7%



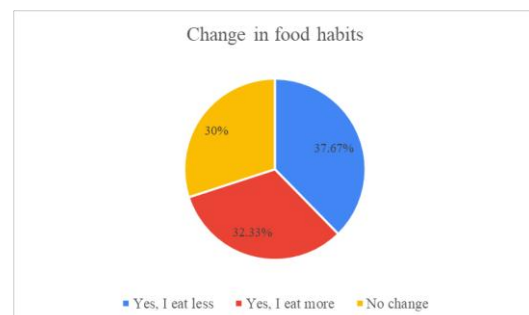
Changes in Eating Habits During Exams

Examination periods impacted food habits, with 37.7% eating less, 32.3% eating more, and 30% reporting no change.

Interpretation: Appetite and eating patterns are directly influenced by academic stress, further emphasizing its broad impact on student health.

Table 8: Change in Food Habits

Category	Frequency (n)	Percentage (%)
Eat less	113	37.7%
Eat more	97	32.3%
No change	90	30.0%



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Reported Mental Health Issues

Stress (44%) was the most commonly reported issue, followed by depression (22.3%), insomnia (16%), and anxiety (15.3%). Only 2.3% of students reported no issues.

Interpretation: The prevalence of psychological issues among students is alarming and points to a critical need for mental health awareness and interventions.

Table 9: Mental Health Issues

Category	Frequency (n)	Percentage (%)
Anxiety	46	15.3%
Stress	132	44.0%
Insomnia	48	16.0%
Depression	67	22.3%
No issues	7	2.3%



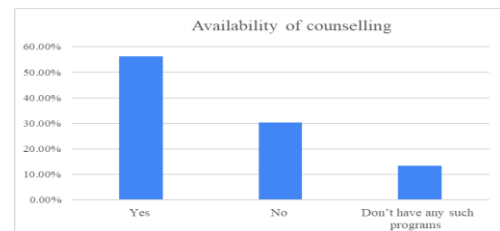
Availability of Mental Health Counselling

More than half (56.3%) of students stated that counselling services are available in their institutions. However, 30.3% said no, and 13.3% reported that no such programs existed.

Interpretation: While many colleges offer counselling services, the lack of awareness or absence of such programs in some institutions needs to be addressed to ensure mental health accessibility for all.

Table 10: Counselling Availability

Category	Frequency (n)	Percentage (%)
Yes	169	56.3%
No	91	30.3%
No such programs	40	13.3%



To conclude the study, the Chi-square test of independence was employed to examine whether significant relationships exist between selected categorical variables related to academic pressure and student stress. The null hypothesis was framed as:

- H_0 : There is no significant relationship between the variables under consideration.
- H_1 : There is a significant relationship between the variables under consideration.

If the p-value is less than the level of significance ($\alpha = 0.05$), the null hypothesis is rejected, indicating a statistically significant association between the variables.

Table 11: Statistical Associations Between Selected Variables: Chi-Square Test Results

S. No.	Variable Pair	Chi-square (χ^2)	df	p-value
1	Gender \times Mental Health Issues	15.962	4	0.01396 *
2	Employment Status \times Mental Health Issues	6.3772	4	0.3823
3	Food Habits \times Stress	83.773	8	8.48e-15 *
4	Type of Institution \times Availability of Counseling	23.952	4	8.166e-05 *
5	Sleep Hours \times Coursework Hours	28.893	12	0.004087 *

* $p < 0.05$, significant.

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The analysis shows that gender is significantly associated with mental health issues ($p = 0.01396$), indicating that male and female students experience mental health concerns differently. In contrast, employment status was not significantly related to mental health issues ($p = 0.3823$), suggesting that part-time or unemployed status may not strongly influence mental well-being in this sample.

A highly significant association was found between food habits and stress ($p < 0.001$), reflecting how dietary behaviours change under stress. Similarly, type of institution showed a strong relationship with availability of counselling services ($p < 0.001$), highlighting the disparity in mental health resources across different college types. Lastly, a significant relationship was found between hours of sleep and coursework hours ($p = 0.004087$), suggesting that academic load impacts sleep patterns.

DISCUSSION

The findings of this study highlight the significant prevalence of academic pressure and its profound impact on the mental health and well-being of college students. The analysis indicates that students commonly experience moderate to high levels of academic stress, with a majority rating their stress at 7 out of 10. The causes of this stress are multifaceted, including heavy coursework, time management issues, performance anxiety, and inadequate coping mechanisms.

One of the key findings is the significant association between gender and mental health issues, suggesting that male and female students experience and report stress differently. This aligns with prior studies, such as the one by Baiju and Rajalakshmi (2021), which found that female students often report higher levels of psychological distress than their male counterparts. Societal norms and gender roles may influence the way students internalize and express their emotional struggles, a pattern observed across educational institutions in India.

The study also found a significant relationship between food habits and stress, underscoring the impact of academic pressure on lifestyle and dietary behavior. This supports findings by Laldikpui and Vijayan (2023), who emphasized that stress among students often manifests in altered eating patterns, including emotional overeating or skipping meals during exam periods. These unhealthy behaviors can contribute to long-term health concerns if left unaddressed.

Another significant relationship emerged between sleep duration and time spent on academic work. Students who spent more time on coursework were found to have reduced sleep, highlighting the imbalance between academic demands and personal well-being. Gong et al. (2023) similarly reported that excessive learning stress often disrupts students' sleeping patterns and leads to learning burnout, which can further hinder academic performance and mental health.

A positive finding from this research was that time management strategies were identified by students as the most effective way to manage academic workload. This suggests that students who are able to plan and prioritize their tasks experience lower levels of stress. Institutions should consider incorporating workshops on time management and study skills as part of their academic support programs.

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However, it was concerning that employment status was not significantly associated with mental health issues. Although one might assume that students juggling part-time work and academics would face higher stress, the results suggest other factors—such as academic culture, institutional support, and personal coping ability—play more dominant roles. This resonates with Anitha and Ravi (2020), who argued that academic stress is shaped more by institutional demands and family pressure than by employment status.

Additionally, the type of institution (aided, government, or private) was significantly associated with the availability of mental health counselling services, revealing disparities in access to mental health resources. Students from private or aided institutions were more likely to report the availability of such support, while those from government colleges showed gaps in access. Reddy, Menon, and Thattil (2018) have previously emphasized the crucial role of institutional counselling centers in reducing stress and preventing burnout among students.

These findings align with the broader literature on student well-being in Indian higher education. Academic stress is increasingly recognized as a serious concern, with consequences ranging from anxiety and insomnia to depression and disengagement. Vijayashree and Srinivasa (2018) also observed stream-wise differences in stress levels, with students in science and professional courses reporting higher pressure. Our study complements these findings by examining how academic stress interrelates with coping strategies, food habits, sleep, and institutional support.

In summary, this research underscores the urgent need for a holistic approach to academic support—one that prioritizes mental well-being alongside academic achievement. Colleges should strengthen student counselling systems, raise awareness about healthy stress management, and foster environments that reduce pressure through inclusive and supportive practices.

CONCLUSION

This study underscores the widespread nature and serious implications of academic stress among college students in Kerala. The findings reveal that a significant portion of students experience moderate to high levels of stress, primarily due to academic workload, time pressure, examinations, peer competition, and lifestyle disruptions. Among the key relationships explored, gender differences in reporting mental health issues stood out, alongside the associations between stress and food habits, sleep duration, and the availability of mental health counselling.

Interestingly, employment status did not have a significant impact on student stress levels, suggesting that other institutional and personal factors are more influential. The results also highlight disparities in access to mental health services based on the type of institution, indicating the need for more equitable and inclusive support systems.

The study emphasizes the importance of time management, healthy lifestyle habits, and access to counselling services in mitigating stress. Institutions should integrate proactive mental health initiatives and student-centric support programs into their educational framework to foster resilience and well-being. Creating awareness among parents, teachers, and policymakers about the psychological burden students face is crucial for building a healthier academic environment that values emotional as well as intellectual development.

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Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Jismi, M., Archa, P.S., Aswathy, K., Deva N.C., Krishnendu, K.R. & Neha, M.B. (2025). Academic Stress Among College Students in Kerala: A Statistical Analysis. *International Journal of Indian Psychology*, 13(2), 3727-3735. DIP:18.01.330.2025 1302, DOI:10.25215/1302.330