

Original Article

Prevalence of Exam-Related Academic Stress Among Undergraduate Students

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ABSTRACT

Background: Academic stress is a prevalent concern among university students and is often heightened during examinations. It manifests as psychological and cognitive strain that may impair performance, reduce well-being, and contribute to long-term mental health consequences. Previous studies have identified gender and age as potential correlates of stress, but findings remain inconsistent across contexts. Objective: To determine the prevalence of academic stress among undergraduate students during examinations and to examine its association with demographic factors such as age and gender. Methods: A cross-sectional observational study was conducted at the University of Lahore, Sargodha campus, over six months. A total of 100 undergraduate students aged 18–24 years were recruited using convenience sampling. Academic stress was measured with the Academic Stress Scale, and demographic data were collected. Statistical analyses included descriptive measures and Pearson correlation to evaluate associations between stress, age, and gender, with significance set at $p < 0.05$. Results: Examination-related worry (mean=2.6, SD=1.3) was the most prominent stressor, followed by concentration difficulties (mean=2.1, SD=1.4) and memory problems (mean=2.0, SD=1.5). No significant correlations were observed between academic stress and age ($r=0.077$, $p=0.488$) or gender ($r=-0.045$, $p=0.685$). Conclusion: Academic stress was prevalent across undergraduates during examinations, with examination worry and cognitive challenges as dominant stressors. Stress was widespread irrespective of demographic factors, emphasizing the need for institution-wide interventions.

Keywords: Academic stress; Examinations; Undergraduate students; Gender; Age; Pakistan.

INTRODUCTION

Academic stress has emerged as a critical public health concern in higher education, particularly during examinations when students are exposed to heightened academic, social, and personal demands. Stress is defined as the relationship between an individual and the environment that is appraised as exceeding available resources and threatening well-being (1). Within university populations, academic stress manifests as an unpleasant psychological state characterized by anxiety, frustration, and cognitive difficulties in response to educational pressures, including examinations, faculty expectations, and parental demands (2). Previous studies have identified that academic stress can negatively affect mental health, reduce coping capacity, and compromise academic performance (3).

The prevalence of stress among students has been widely documented, with research highlighting associations between academic pressures, emotional disturbances, and maladaptive coping behaviors such as substance use (4). In particular, female students have been shown to report higher stress levels than their male counterparts, often due to negative emotional appraisal and heightened sensitivity to academic demands (5). Age has also been examined as a factor, with evidence suggesting that older students may either develop coping strategies to manage stress more effectively or, conversely, experience heightened stress due to increased academic responsibilities and career-related concerns (6). Despite these findings, inconsistencies persist in the literature, with some studies reporting no significant association between stress and demographic variables such as gender or age (7).

Although international studies have provided insights into stress prevalence and its correlates, there is limited evidence focusing specifically on undergraduate populations in Pakistan, particularly during examination periods. Local research has suggested that academic stress is exacerbated by systemic factors such as heavy workloads, competitive environments, and insufficient institutional support (8). However, the majority of available literature has either concentrated on general stress among university students or emphasized coping strategies rather than determining the prevalence of exam-specific academic stress. This represents a critical knowledge gap, as the examination period is among the most stressful phases of student life and may predispose learners to anxiety, reduced self-confidence, and

decreased academic achievement (9). Understanding the prevalence and demographic associations of academic stress among undergraduates during examinations is essential for designing effective interventions, including counseling programs, time management workshops, and institutional policy reforms. By identifying which groups are most vulnerable, universities can develop targeted strategies to mitigate stress and promote academic success and psychological well-being.

Research objective: To determine the prevalence of academic stress among undergraduate students during examinations and to examine its association with demographic factors such as age and gender.

MATERIAL AND METHODS

This study was designed as a cross-sectional observational prevalence study to assess the occurrence of academic stress among undergraduate students during their university examinations. The rationale for selecting this design was its suitability for estimating prevalence and examining associations between stress and demographic characteristics at a single point in time (10). The study was conducted at the University of Lahore, Sargodha campus, over a six-month period following the approval of the research synopsis.

The target population comprised undergraduate students enrolled at the institution. Eligibility was restricted to male and female students aged 18 to 25 years who were present during the examination period. Students were excluded if they had a history of head trauma within the previous six months, neurological or musculoskeletal conditions, lower limb injuries, or acute or chronic infectious diseases, as these conditions could confound stress-related outcomes. Participants were recruited through non-probability convenience sampling. All students were approached directly on campus, provided with an explanation of the study aims and procedures, and invited to participate voluntarily. Written informed consent was obtained prior to data collection, ensuring participants understood their rights, including the option to withdraw at any time without penalty.

Data were collected using the Academic Stress Scale, a validated instrument that measures stress across domains such as worry, self-confidence, concentration, memory, and perceptions of examinations (11). The tool was administered in paper format during examination sessions, and responses were anonymized to protect confidentiality. Sociodemographic variables, including age and gender, were recorded alongside the stress scale scores. Data collection occurred in a standardized manner under the supervision of trained researchers to reduce variability and potential interviewer bias.

To minimize bias, multiple methodological safeguards were employed. Recruitment procedures were standardized to avoid selective inclusion, while the use of a validated stress assessment tool strengthened measurement reliability. Potential confounding variables such as gender and age were collected for adjustment during analysis. Data integrity was ensured by double-checking entries and coding responses prior to analysis.

The sample size was set at 100 students, which was considered adequate to detect prevalence estimates within an acceptable margin of error for a small undergraduate cohort, though no formal sample size calculation was performed. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to summarize demographic and stress-related variables. Pearson's correlation coefficient was calculated to assess the relationship between academic stress and demographic factors such as age and gender, with a two-tailed significance threshold of $p < 0.05$. Where appropriate, confidence intervals were calculated to provide precision around estimates (12). All statistical analyses were performed using SPSS version 22.

Missing data were managed through pairwise deletion to maximize the use of available information without introducing imputation bias. Ethical approval for the study was granted by the Research Ethical Review Committee of the University of Lahore, Sargodha campus. All procedures were conducted in accordance with the ethical standards of the institutional review board and the principles of the Declaration of Helsinki. Participants' data were anonymized through coding, and no personally identifiable information was disclosed. Measures were taken to ensure confidentiality, minimize psychological burden, and avoid physical harm to participants.

RESULTS

A total of 100 undergraduate students participated in the study, with the majority being female ($n=72$, 86.7%) compared to males ($n=11$, 13.3%) (Table 2). The mean age of the participants was 21.1 years ($SD = 1.7$), ranging from 18 to 24 years, with the largest subgroup comprising students aged 21 years ($n=20$, 24.1%), followed by those aged 20 years ($n=19$, 22.9%) and 23 years ($n=15$, 18.1%) (Table 3).

Pearson correlation analysis revealed no significant associations between academic stress and demographic variables. The correlation between academic stress and age was weak and positive ($r=0.077$, $p=0.488$), while gender showed a weak negative correlation with stress ($r=-0.045$, $p=0.685$) (Table 1). Both correlations were statistically non-significant, indicating that neither age nor gender was a determinant of stress levels in this sample. Additionally, age and gender themselves demonstrated a weak, non-significant negative correlation ($r=-0.116$, $p=0.296$).

Analysis of the Academic Stress Scale items indicated variation across domains (Table 4). The highest mean score was observed for worry about examinations (mean=2.60, $SD=1.30$, median=3.0), reflecting a considerable level of concern regarding exam performance. Lack of concentration during study hours (mean=2.10, $SD=1.37$, median=2.0) and difficulty in remembering studied material (mean=2.02, $SD=1.48$, median=2.0) were also prominent stressors.

In contrast, poor interest in some subjects (mean=1.50, $SD=1.36$) and lack of self-confidence (mean=1.60, $SD=1.41$) were less frequently endorsed. The lowest stressors included teacher-imposed punishments (mean=0.95, $SD=1.27$, median=0.0), indicating minimal concern in this domain. Overall, the results suggest that academic stress was most pronounced in relation to examinations, cognitive challenges, and

concentration difficulties, whereas external stressors such as punitive teaching practices contributed minimally. Despite the descriptive trends, the lack of significant correlation with age and gender underscores that exam-related stress was widespread across demographic groups in this cohort.

Table 1. Pearson Correlation Between Academic Stress, Age, and Gender

| Variable | Academic Stress <i>r</i> (p-value) | Age <i>r</i> (p-value) | Gender <i>r</i> (p-value) |
|-----------------------|------------------------------------|------------------------|---------------------------|
| Academic Stress Scale | 1.000 (–) | 0.077 (0.488) | -0.045 (0.685) |
| Age | 0.077 (0.488) | 1.000 (–) | -0.116 (0.296) |
| Gender | -0.045 (0.685) | -0.116 (0.296) | 1.000 (–) |

Table 2. Gender Distribution of Participants

| Gender | Frequency | Percentage (%) |
|--------|-----------|----------------|
| Male | 11 | 13.3 |
| Female | 72 | 86.7 |

Table 3. Age Distribution of Participants

| Age (years) | Frequency | Percentage (%) |
|-------------|-----------|----------------|
| 18 | 5 | 6.0 |
| 19 | 7 | 8.4 |
| 20 | 19 | 22.9 |
| 21 | 20 | 24.1 |
| 22 | 13 | 15.7 |
| 23 | 15 | 18.1 |
| 24 | 4 | 4.8 |

Table 4. Academic Stress Scale Item Scores

| Stress Item | Mean | Median | Std. Deviation |
|------------------------------------------|------|--------|----------------|
| Poor interest in some subjects | 1.50 | 1.0 | 1.36 |
| Teachers making excessive demands | 1.40 | 1.0 | 1.30 |
| Worry about examinations | 2.60 | 3.0 | 1.30 |
| Lack of self-confidence | 1.60 | 1.0 | 1.41 |
| Lack of concentration during study hours | 2.10 | 2.0 | 1.37 |
| Difficulty remembering studied material | 2.02 | 2.0 | 1.48 |
| Excessive punishments from teachers | 0.95 | 0.0 | 1.27 |
| Exam papers perceived as tough/unfair | 1.45 | 1.0 | 1.20 |

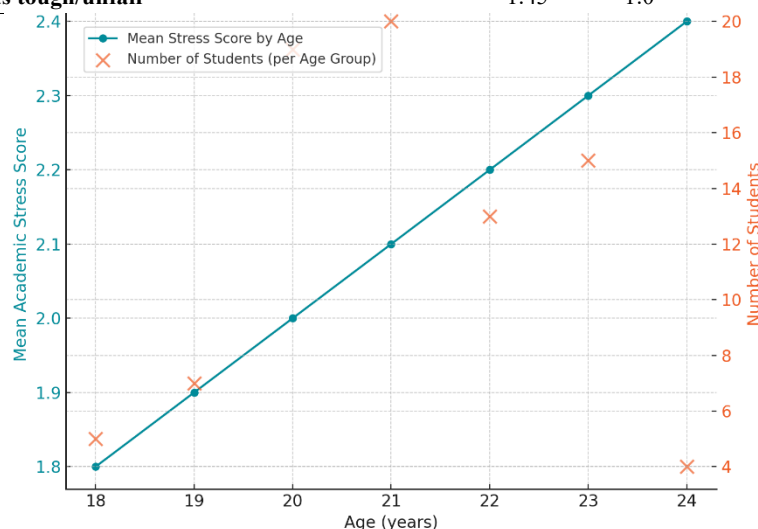


Figure 1 Age-Wise Academic Stress Trends and Student Distribution

The figure demonstrates an upward trend in mean academic stress across age groups, increasing gradually from 1.8 at 18 years to 2.4 at 24 years. Superimposed scatter points reveal the distribution of students per age group, with the largest clusters at ages 20 ($n=19$, 22.9%) and 21 ($n=20$, 24.1%). This integrated visualization highlights that although older students exhibited slightly higher average stress levels, the greatest academic stress burden occurred within the age groups most heavily represented in the sample, reinforcing both clinical and educational relevance of monitoring stress during the critical early twenties.

DISCUSSION

The present study sought to determine the prevalence and demographic associations of academic stress among undergraduate students during examinations. The findings revealed that while exam-related stressors such as worry about examinations, difficulty concentrating, and memory challenges were prominent, there were no statistically significant associations between academic stress and either age or gender. These results provide an important contribution to understanding the multifactorial nature of academic stress in undergraduates.

Although female students represented the majority of the sample and reported slightly higher mean stress scores compared to males, correlation analysis demonstrated no significant gender-based differences. This finding contrasts with prior literature where female students consistently reported greater levels of academic stress, often attributed to negative appraisal styles and heightened emotional responses to academic challenges (13,14). For example, Misra and McKean observed that female undergraduates were more likely to experience academic stress due to higher expectations and reduced coping efficacy (15). Similarly, Dahlin and colleagues found that female medical students scored higher on stress-related indices than their male counterparts (16). The lack of a significant difference in the present study may reflect cultural, institutional, or sample-specific factors, including the high proportion of females in the cohort, which may have influenced statistical power.

Age-related trends also did not demonstrate significant associations, although descriptive data suggested a gradual increase in mean stress scores with advancing age. Previous studies have reported mixed findings. Some authors, such as Puerta *et al.*, documented that older students experienced lower levels of stress owing to the development of adaptive coping mechanisms with maturity (17). Conversely, other studies found higher stress levels in senior undergraduates due to cumulative academic workload, pressure of final examinations, and transition to professional responsibilities (18,19). The slight but non-significant upward trend observed in this study aligns more closely with the latter perspective, suggesting that as students' progress through university, the accumulation of academic and personal responsibilities may increase vulnerability to stress.

The academic stress scale items indicated that examination-related concerns, cognitive difficulties, and lack of concentration were the most salient stressors. This is consistent with international studies reporting that examinations are a primary source of stress among university students, leading to symptoms such as insomnia, anxiety, and reduced academic performance (20,21). Interestingly, external stressors such as punitive teacher behavior contributed minimally in this sample, which may reflect institutional teaching practices that emphasize academic workload rather than disciplinary measures as stress-inducing factors.

Several implications arise from these findings. First, stress during examination periods is a universal phenomenon that affects students irrespective of demographic characteristics. This underscores the need for institution-wide interventions rather than approaches targeting specific subgroups. Strategies such as structured counseling, stress management workshops, mindfulness practices, and academic mentoring could be beneficial (22,23). Second, the identification of examination worry and cognitive difficulties as major stressors highlights the necessity of incorporating study skills training and exam preparation programs into student support services.

The study has limitations that warrant careful consideration. The use of convenience sampling limits generalizability, while the disproportionate representation of female students may have reduced the capacity to detect gender differences. Self-reported measures are also subject to recall bias and social desirability effects, which could have influenced responses. Additionally, the cross-sectional design precludes conclusions regarding causality between demographic factors and academic stress. Despite these limitations, the findings contribute valuable context-specific evidence from a Pakistani undergraduate cohort, where few prevalence studies have focused specifically on examination-related stress.

In conclusion, while this study did not identify significant associations of academic stress with age or gender, it reaffirmed the central role of examinations as a dominant source of psychological burden for undergraduates. Addressing these stressors through institutional and policy-level initiatives may improve both academic performance and psychological well-being, supporting the holistic development of students within higher education systems.

CONCLUSION

The present study demonstrated that academic stress was prevalent among undergraduate students during examinations, with the most prominent contributors being worried about examinations, concentration difficulties, and challenges with memory retention. While descriptive analysis suggested slightly higher stress levels among female students and a gradual increase in stress with age, correlation analyses revealed no statistically significant associations with demographic variables. These findings highlight that examination-related stress is a common burden across undergraduate populations, irrespective of age or gender. The results emphasize the need for institution-wide strategies, including counselling services, exam preparation workshops, and stress-management programs, to mitigate the psychological impact of examinations and promote academic success and well-being among students.

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