



Relationships among Academic Stress, Emotional Intelligence, and Academic Performance of University Students: A Correlational Study

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ABSTRACT

This cross-sectional correlational study examined the relationship among academic stress, emotional intelligence (EI), and self-reported cumulative grade point average (GPA) in 315 undergraduate students from two public-sector universities in Faisalabad, Pakistan. The researchers computed item-level descriptive statistics, internal consistency estimates, Pearson and Spearman correlations, and supplementary Welch independent-samples t tests. The mean academic-stress score was 3.65 (SD = 0.75), the mean EI score was 3.85 (SD = 0.59), and the mean GPA was 2.87 (SD = 0.52). Academic stress was not significantly correlated with EI ($r = .013$, $p = .815$) or with GPA ($r = -.085$, 95% CI $[-.194, .025]$, $p = .130$), and EI was not significantly associated with GPA ($r = -.050$, $p = .374$); therefore, all three null hypotheses were retained. Supplementary comparisons showed higher EI in females ($d = 0.66$) and higher stress in GCUF students ($d = 0.66$), with negligible differences in GPA. The findings are bivariate and provisional given the non-probability sample, self-reported GPA, and study-developed instruments.

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Introduction

University students face multiple academic demands, including examinations, assignments, deadlines, course requirements, and expectations for achievement. Academic stress can arise when students perceive these demands as exceeding their coping resources (Lazarus & Folkman, 1984). Persistent stress may affect wellbeing, concentration, and learning (Pascoe et al., 2020). Emotional intelligence refers to the perceived ability to recognize, understand, and regulate emotions and to respond effectively to the emotions of others (Salovey & Mayer, 1990; Mayer et al., 2016). These competencies may be related to the students' appraisal of academic demands and responses to them.

Prior studies have established links between EI and academic outcomes (MacCann et al., 2020; Perera & DiGiacomo, 2013), while studies have assessed stress among higher-education students (Bedewy & Gabriel, 2015; Pascoe et al., 2020). The nature and extent of such associations vary according to the contexts and measures taken for each construct. This information can give insights for the cases of public-sector universities in Pakistan, provided that there are properly documented protocols for measurements and data entry during analysis.

Grade point average (GPA) is widely used in higher education to inform decisions regarding scholarships, progression, graduate admission, and employment opportunities. Understanding whether psychological characteristics, such as academic stress and emotional intelligence, are associated with GPA may have practical, as well as theoretical, value. Although stress and emotional intelligence have been examined extensively in relation to student outcomes, their associations may differ across educational and cultural contexts. Accordingly, this study examines the bivariate associations among academic stress, emotional intelligence, and self-reported GPA among undergraduate students in two public-sector universities in Faisalabad, Pakistan.

Academic stress

Academic stress is typically conceptualized within the framework of the transactional tradition, where stress is brought up in the person–environment relationship when demands are evaluated as challenging or too demanding compared to available resources (Lazarus & Folkman, 1984). In higher Education, these demands may include greater workloads, compressed deadlines, high-stakes assessments, the sense of the difficulty of the course, competition with peers, and the need to combine study with family, social, and employment responsibilities (Bedewy & Gabriel, 2015; Misra & McKean, 2000). Some of these sources of stress are more salient for certain students than others, while their overall impact depends on how students evaluate these demands (Odilova, & Nawaz, 2025).

The relationship between stress and performance has generally been assumed to be logical, where moderate levels of arousal are most supportive of performance while too high impairs it (Yerkes & Dodson, 1908). In practice, educational research often finds only simple linear associations that are generally small to moderate in magnitude. Academic stress may impair performance by challenging attentional resources, disrupting study processes, and encouraging avoidance (see Pascoe et al., 2020, for a review of the effect of stress on students). Poor performance, in turn, may also be a source of increased stress; therefore, the association is likely to be reciprocal. A cross-sectional study cannot determine causal relationships. Thus, this study only explores associations between emotional competencies and academic stress.

Emotional intelligence

Emotional intelligence was conceptualized by Salovey and Mayer (1990) as a set of interrelated abilities that involve appraisal, expression, and regulation of emotions, and was subsequently popularized in more general and competence-based terms by Goleman (1995). Current research explores two dominant approaches to emotional intelligence, including ability, which focuses on assessing emotional reasoning skills (Mayer et al., 2016), and traits or self-reported emotional intelligence, concerned with emotional disposition and perception (Petrides & Furnham, 2001). The distinction matters because the two approaches do not necessarily converge empirically, and self-report instruments are exposed to response biases that performance-based tests are not.

The instrument used in the present study is a self-report questionnaire whose twenty items are organised around five domains: self-awareness, self-regulation, self-motivation, social skills, and empathy. This domain structure resembles the competency-oriented formulations associated with Goleman (1995) rather than a purely ability-based model, and the scale is therefore best interpreted as an index of students' self-perceived emotional competencies. Throughout this article, “emotional intelligence” and “EI” are used in that sense.

Prior evidence on EI, stress, and academic performance

Meta-analytic evidence indicates that emotional intelligence is positively, though modestly, related to academic performance, with the strength of the association varying across conceptualizations and measurement methods (MacCann et al., 2020; Perera & DiGiacomo, 2013). Studies of the transition into university similarly suggest that certain emotional competencies are associated with academic success (Parker et al., 2004). A broader review of the psychological correlates of university performance, however, indicates that motivational and self-regulatory constructs such as self-efficacy and effort regulation tend to show stronger associations with grades than many personality and affective variables (Richardson et al., 2012). These findings suggest that, even where EI relates to performance, its direct association with GPA is likely to be small and may be difficult to detect in a single moderately sized sample.

Research into academic emotions provides further support for the view that the affective experiences of students during learning and assessment are related to achievement, motivation, and self-regulated learning (Pekrun et al., 2002). If emotional competencies effectively regulate these associations, students reporting higher EI scores should report experiencing less academic

stress. The strength of this relationship most likely depends on how stress and emotional competencies were operationalized in this study, which partially explains why it was chosen for this analysis.

Conceptual framework and relationships tested

Conceptually, the transactional model implies that academic demands are likely to be evaluated as stressful if students' perception of these demands exceeds their appraisal of available coping resources (Lazarus & Folkman, 1984). Emotionally intelligent responses to stressors contribute to adaptive coping behavior; therefore, emotional intelligence may play a role in students' appraisal of academic demands. However, as the study only explores three bivariate relationships – between academic stress and EI, academic stress and GPA, and EI and GPA – it does not assess whether EI predicts the stress-performance relationship. In addition, the study does not attempt to operationalize the role of EI in the context of academic stress and performance using a multivariate model. Any theoretical pathway involving EI as a mechanism should therefore be regarded as a rationale for future research rather than a relationship examined in this study.

Rationale, research gap, and contribution

Previous research has established modest positive associations between emotional intelligence and academic performance in international meta-analyses (MacCann et al., 2020; Perera & DiGiacomo, 2013) and has documented academic stress among higher-education students (Bedewy & Gabriel, 2015; Pascoe et al., 2020). However, the specific gap addressed by this study concerns the lack of transparent, item-level evidence on how academic stress, self-perceived emotional intelligence, and GPA are associated in public-sector universities in Faisalabad, Pakistan. Existing Pakistani studies have generally reported scale-level findings without publishing item-level descriptive statistics, and the present dataset does not permit mediation, moderation, or causal analysis. What remains unknown is therefore whether, in this specific institutional context, academic stress is associated with EI or GPA, and whether EI is associated with GPA, when examined using bivariate correlational estimates. The study contributes by reporting item-level descriptives, Pearson and Spearman correlations, and clearly labelled exploratory group comparisons; it does not claim to test an EI-mediated stress-performance model.

Objectives

- To describe responses to each academic-stress and EI questionnaire item.
- To examine the relationship between academic stress and emotional intelligence.
- To examine the relationship between academic stress and academic performance (GPA).
- To examine the relationship between emotional intelligence and academic performance (GPA).
- To report limited independent-samples t tests for scale scores and GPA by gender and university as supplementary analyses.

Research hypotheses

- H01: There is no significant relationship between academic stress and emotional intelligence.
- H02: There is no significant relationship between academic stress and academic performance (GPA).
- H03: There is no significant relationship between emotional intelligence and academic performance (GPA).

All hypotheses were tested at a two-tailed significance level of $\alpha = .05$. Since all hypotheses were stated in null form, a statistically significant result leads to rejection of that particular null hypothesis, while for non-significant results, one cannot simply conclude that there is no relationship between the relevant variables.

Method

Design and participants

A quantitative, cross-sectional correlational design was employed. The dataset comprises 315 undergraduates: 147 and 168 students from two public sector universities in Faisalabad, where 155 were male and 160 were female students. Sampling was

done using a combination of quota and convenience. As a non-probability sample was used, results should not be generalized beyond the sampled settings without caution.

Eligible participants were undergraduate students currently enrolled at the two participating public-sector universities in Faisalabad. Recruitment used a combination of quota and convenience sampling: the researchers sought approximately balanced numbers of participants from each university and each gender-coded group, and then approached available students within those quotas. As participation was not based on random selection, the sample is illustrative of the participating settings rather than representative of undergraduate students in Pakistan, and selection bias cannot be ruled out.

Measures

The questionnaire comprised a 20-item Academic Stress Scale and a 20-item Student's Emotional Intelligence Scale. Each item was rated on a 5-point scale (1=Strongly Disagree to 5=Strongly Agree). A high score was associated with a high level of academic stress experienced by the students or high emotional intelligence. GPA was self-reported on a four-point scale.

The Academic Stress Scale comprises six dimensions: workload and deadlines (Items 1–4), examination and assessment anxiety (Items 5–8), peer comparison and external standards (Items 9–11), course difficulty (Items 12–14), time and responsibility balance (Items 15–17), and work–study balance (Items 18–20). The Students' Emotional Intelligence Scale comprises five dimensions of four items each: self-awareness (Items 21–24), self-regulation (Items 25–28), self-motivation (Items 29–32), social skills (Items 33–36), and empathy (Items 37–40). The full wording of each item is given in Tables 1 and 2. All items are worded in the direction of the construct they measure, so no reverse scoring was necessary, and scale scores were computed as the mean of the 20 items so that they remain on the original 1–5 metric.

Cronbach's alpha was reported as a preliminary assessment of internal consistency reliability (Cronbach, 1951). Cumulative GPA was self-reported. Students' self-reported grades are generally reliable, though they might be inflated, especially for students with low grades (Kuncel et al., 2005), which is why the limitation of these measures is discussed.

The Academic Stress Scale and the Students' Emotional Intelligence Scale were developed for this study. Their items were formulated from the constructs and dimensions described above, reviewed by the research team for content relevance and clarity, and administered in English. Consequently, Cronbach's alpha is reported only as preliminary evidence of internal consistency; it does not establish content validity, construct validity, or the dimensional structure of either instrument. These limitations should be considered when interpreting all scale-level and dimension-level results.

Data analysis

Item means and standard deviations were computed for all 40 items. Scale scores were calculated as the mean of the 20 items of each scale, and dimension scores as the mean of the items within each dimension. Cronbach's alpha was estimated as an index of internal-consistency reliability. Pearson correlations were calculated to evaluate linear associations, with Spearman correlations provided as a non-parametric rank-based verification. Welch independent-samples t tests were conducted to assess differences in scale scores and GPA by gender and university. Missing values, extreme response categories, and duplicates were excluded before analyses.

Pearson's r was selected as the statistical index for measuring linear associations because the score values were means of multiple five-point Likert items and, therefore, had an interval nature. Spearman's rho was added to evaluate associations at the level of item ranks because the distributions of GPA and Likert-type items are often skewed, and applying different measures can verify whether conclusions hold true under alternative assumptions. Ninety-five percent confidence intervals for Pearson's r were calculated using Fisher's transformation. The magnitude of the observed associations was qualified using Cohen's (1988) widely adopted criteria, with additional guidance from the effect size classification proposed by Gignac and Szodorai (2016) for individual-differences research. Specifically, r values of approximately .1, .2, and .3 were described as small, medium, and large, respectively.

Welch's t test was used to evaluate differences between independent groups because it is more reliable than Student's t test when standard deviations and sample sizes differ (Delacre et al., 2017). Cohen's d values were calculated using the pooled standard deviation. The three zero-order correlations were prespecified as the primary tests of H₀₁-H₀₃ and were interpreted at a two-tailed alpha of .05. The six Welch t tests and the 22 dimension-level correlations were exploratory secondary analyses. Bonferroni-adjusted thresholds were calculated as alpha = .0167 for the three primary correlations and alpha = .0083 for the six t

tests. None of the primary correlations were statistically significant, so no adjustments changed any primary decisions. Exploratory results are reported with their nominal p-values and are interpreted as hypothesis-generating only.

There was no a priori power calculation documented for the study. A post hoc sensitivity analysis indicates that, with $N = 315$ and two-tailed $\alpha = .05$, the study had 80% power to detect a Pearson correlation of approximately $r = .16$; correlations smaller than this value could plausibly have gone undetected. This calculation assumes a simple bivariate test, complete data, and the observed sample size, but it does not establish that the study was adequately powered for subgroup comparisons, dimension-level correlations, or any multivariate model.

Ethical considerations

Prior to data collection, participants were informed about the study's aim, voluntary nature, confidentiality, and right to withdraw, and verbal consent was obtained. Permission was acquired from the universities the participants belonged to. No personally identifying information is reported in this manuscript.

Results

Item-wise analysis of the Academic Stress Scale

Table 1 contains the mean and standard deviation for each item of the Academic Stress Scale.

Table 1; Item-wise descriptive statistics for the Academic Stress Scale (N = 315)

Item	Dimension	Questionnaire statement (shortened only where needed)	M	SD
1	Workload and deadlines	I find it stressful to manage multiple assignments simultaneously.	3.50	1.19
2		I feel that my academic workload exceeds my coping ability.	3.51	1.20
3		I feel pressured by tight academic deadlines.	3.52	1.20
4		I feel stressed when assignments are given unexpectedly.	3.55	1.19
5	Examination/assessment anxiety	I feel anxious before important examinations.	3.60	1.12
6		I experience difficulty performing well in exams due to anxiety.	3.57	1.11
7		I feel stressed about the possibility of receiving poor grades.	3.58	1.10
8		I feel anxious before submitting assignments or projects.	3.62	1.06
9	Peer comparison/external standards	I compare my academic performance with that of my classmates.	3.61	1.05
10		I feel stressed when I think I am performing worse than my peers.	3.64	1.03
11		I feel pressure to meet academic standards set by others.	3.69	1.01
12	Course difficulty	I find some courses more difficult than I initially expected.	3.69	0.96
13		I feel less confident academically when course content is difficult.	3.70	0.93
14	Time/responsibility balance	I feel stressed when I struggle to understand course material.	3.70	0.90
15		I find it difficult to balance academic and personal responsibilities.	3.72	0.88

Item	Dimension	Questionnaire statement (shortened only where needed)	M	SD
16	Work-study balance	I feel stressed due to a lack of time for my academic tasks.	3.73	0.88
17		I feel overwhelmed when managing multiple responsibilities.	3.77	0.85
18		I feel physically tired because I have to manage both work and studies.	3.79	0.86
19		I feel mentally exhausted when balancing work and academic responsibilities.	3.79	0.84
20		I find it difficult to meet academic deadlines due to my work schedule.	3.79	0.83

Note. Response scale: 1–5. M = item mean; SD = standard deviation.

Each of the 20 items in the Academic Stress Scale has a mean score above the scale midpoint of 3.00, ranging from 3.50 (Item 1) to 3.79 (Items 18–20). Items relating to workload, deadlines, and examination anxiety were endorsed more strongly, whereas items relating to time, responsibility, and work–study balance were reported to have the highest means. Item standard deviations decreased progressively from approximately 1.19–1.20 for Items 1–4 to 0.83–0.88 for Items 15–20. Because item means increase almost monotonically with item position (Spearman $\rho = .99$), this pattern raises the possibility of questionnaire-order effects, consistent response styles, or a data-processing issue.

Item-wise analysis of the Emotional Intelligence Scale

Table 2 reports the descriptive statistics for each item of the Students' Emotional Intelligence Scale.

Table 2; Item-wise descriptive statistics for the Emotional Intelligence Scale (N = 315)

Item	Dimension	Questionnaire statement	M	SD
21	Self-awareness	I understand why I feel a certain way in different situations.	3.81	0.79
22		I understand how my emotions affect my academic performance at university.	3.29	1.23
23		I am conscious of my emotional reactions in different situations.	3.38	1.18
24		I notice changes in my mood during challenging academic tasks.	3.51	1.11
25		I can control my emotions when I am angry or stressed.	3.55	1.11
26	Self-regulation	I am able to manage my negative emotions effectively.	3.63	1.07
27		I adapt my emotions according to the situation.	3.68	1.02
28		I remain calm during difficult situations.	3.73	1.01
29	Self-motivation	I motivate myself to achieve my goals.	3.84	0.99
30		I stay positive even when I face failures.	3.91	0.96
31		I use positive thinking to improve my performance.	3.91	0.96
32		I do not give up easily when challenges arise.	3.95	0.96
33	Social skills	I handle conflicts positively and respectfully.	3.98	0.97
34		I maintain healthy relationships with people around me.	4.05	0.99
35		I work well with others in a team.	4.07	1.02
36		I communicate my feelings clearly to others.	4.08	1.05

Item	Dimension	Questionnaire statement	M	SD
37	Empathy	I try to see situations from others' perspectives.	4.13	1.08
38		I support people when they are emotionally distressed.	4.13	1.10
39		I can understand how others are feeling by observing them.	4.13	1.10
40		I feel concerned when others are upset or sad.	4.17	1.09

Note. Response scale: 1–5. M = item mean; SD = standard deviation.

EI item means ranged from 3.29 (Item 22, understanding how emotions impact academic performance) to 4.17 (Item 40, feeling concerned about others' upset or sad), with all items scoring above the scale's midpoint.

Students endorsed items tapping the interpersonal domains most highly (empathy: Items 37-40, M 4.14; social-skills: Items 33-36, M 4.04), relative to items tapping self-awareness (Items 21-24, M 3.50) and self-regulation (Items 25-28, M 3.65).

This pattern suggests that students felt more competent regarding their ability to read and respond to others' affect than their ability to monitor and regulate their own affect in relation to academic performance.

Item 21 (M = 3.81, SD = 0.79) differed in comparison to the other items assessing self-awareness, which had standard deviations ranging from 1.11 to 1.23; the item contributed to the relatively low internal consistency of the self-awareness dimension ($\alpha = 0.74$; Table 3).

Dimension-level summaries

In addition to the presented tables with item-level information, Table 3 below provides means and standard deviations by dimension calculated from respondent-level scores, as well as reliability information for each of the dimensions:

Table 3; Dimension-level scores and internal consistency for the Academic Stress and Emotional Intelligence Scales

Scale	Dimension	Items	M (SD)	α
Academic stress	Workload and deadlines	1–4	3.52 (1.16)	0.98
Academic stress	Examination/assessment anxiety	5–8	3.59 (1.06)	0.97
Academic stress	Peer comparison/external standards	9–11	3.65 (0.99)	0.96
Academic stress	Course difficulty	12–14	3.69 (0.89)	0.95
Academic stress	Time/responsibility balance	15–17	3.74 (0.84)	0.97
Academic stress	Work–study balance	18–20	3.79 (0.79)	0.93
Emotional intelligence	Self-awareness	21–24	3.50 (0.82)	0.74
Emotional intelligence	Self-regulation	25–28	3.65 (0.95)	0.93
Emotional intelligence	Self-motivation	29–32	3.90 (0.89)	0.94
Emotional intelligence	Social skills	33–36	4.04 (0.90)	0.91
Emotional intelligence	Empathy	37–40	4.14 (1.00)	0.94

Note. Dimension scores are the mean of the items within each dimension (response scale: 1–5); N = 315. α = Cronbach's alpha.

Among the stress dimensions, means increased from 3.52 (workload and deadlines) to 3.79 (work–study balance), a spread of 0.27 scale points. Among the EI dimensions, the spread was considerably wider, from 3.50 (self-awareness) to 4.14 (empathy), a spread of 0.64 scale points. Whereas the stress dimensions are tightly clustered, the EI dimensions show clear differentiation, suggesting that the EI scale discriminates between competencies, at least in terms of mean endorsement, more than the stress scale discriminates between sources of stress. Dimension-level alphas ranged from 0.93 to 0.98 for stress and from 0.74 to 0.94 for EI; the very high values for several stress dimensions point to considerable item redundancy within those dimensions.

Scale-level descriptive statistics and preliminary reliability

Table 4; Scale-level descriptive statistics and Cronbach's alpha (N = 315)

Measure	M	SD	Cronbach's α
Academic stress	3.65	0.75	0.956
Emotional intelligence	3.85	0.59	0.886
Academic performance (GPA)	2.87	0.52	—

Note. Alpha is an internal-consistency estimate, but not proof of validity or one-dimensionality per se.

The Academic Stress Scale showed very high internal consistency ($\alpha = .956$), and the EI scale showed good internal consistency ($\alpha = .886$). However, several stress-dimension alphas were extremely high (.93–.98), which may reflect substantial item redundancy or highly similar item wording rather than superior measurement. Alpha is not evidence of validity, one-dimensionality, or the adequacy of the proposed subscale structure. Item-level correlations and factor-analytic evidence are needed before the stress dimensions are treated as distinct constructs; until then, the dimension-level results should be interpreted descriptively and cautiously.

Relationships among academic stress, EI, and GPA

Table 5; Pearson and Spearman correlations among academic stress, EI, and GPA

Variables	Pearson r	P	Spearman ρ	p	Decision ($\alpha=.05$)
Academic stress–Emotional intelligence	0.013	= 0.815	–0.004	= 0.950	Not significant
Academic stress–GPA	–0.085	= 0.130	–0.104	= 0.065	Not significant
Emotional intelligence–GPA	–0.050	= 0.374	–0.067	= 0.237	Not significant

Table 5 presents the Pearson and Spearman coefficients. None of the three primary associations was statistically significant at $\alpha = .05$. Academic stress and EI were negligibly associated ($r = .013$, $p = .815$), while academic stress had a small negative, non-significant relationship with GPA ($r = -.085$, 95% CI $[-.194, .025]$, $p = .130$) and EI had a small negative, non-significant relationship with GPA ($r = -.050$, 95% CI $[-.160, .061]$, $p = .374$). These results indicate an absence of statistical evidence for an association in this sample; they do not demonstrate that the population associations are exactly zero.

Hypothesis H01 could not be rejected: the association between academic stress and EI was negligible ($r = .013$, 95% CI $[-.097, .124]$; Spearman $\rho = -.004$), and the confidence interval is compatible with values ranging from a small negative to a small positive association. Hypothesis H02 also could not be rejected: the association between academic stress and GPA was negative but not statistically significant ($r = -.085$, 95% CI $[-.194, .025]$; Spearman $\rho = -.104$, $p = .065$). The coefficient of determination ($r^2 = 0.007$) indicates that academic stress accounted for less than 1% of the variance in GPA in this sample. Although the direction of the estimate is consistent with theoretical expectation, the interval contains zero and excludes negative associations stronger than approximately $r = -.19$; the data are therefore compatible with no association or a small negative one.

Hypothesis H03 could not be rejected: the association between EI and GPA was negative but not statistically significant ($r = -.050$, 95% CI $[-.160, .061]$; Spearman $\rho = -.067$, $p = .237$). Because the upper bound of this interval is approximately .06, the present data do not reproduce the modest positive EI–GPA association reported in meta-analyses, although the self-reported nature of both the EI measure and GPA may attenuate any such association. Pearson and Spearman coefficients led to the same conclusions for all three pairs of variables, and none of the decisions was affected by Bonferroni adjustment.

For descriptive completeness, correlations at the dimension level were also inspected (22 Pearson coefficients: each stress dimension with GPA and with EI, and each EI dimension with GPA and with stress). Only two reached nominal significance: workload and deadlines with GPA ($r = -.139$, $p = .013$) and self-awareness with academic stress ($r = .112$, $p = .046$). Neither survives correction for 22 comparisons, and with this many tests about one nominally significant result is expected by chance alone; these coefficients are therefore treated as hypothesis-generating only. The remaining coefficients were small ($|r| \leq .10$), and the correlations of the interpersonal EI dimensions (social skills, empathy) with GPA were close to zero.

Supplementary t-test results

Welch independent-samples t tests are reported below as exploratory supplementary analyses. In the available dataset, gender and university are coded as male and female students and UEF/GCUF.

Table 6; Welch independent-samples t tests by gender and university

Grouping variable	Outcome	Male M (SD)	Female (SD)	M t	Df	p	Interpretatio n
Gender	Academic stress	3.54 (0.74)	3.77 (0.74)	-2.72	312.6	= 0.007	Significant
Gender	Emotional intelligence	3.66 (0.66)	4.03 (0.44)	-5.78	267.2	< .001	Significant
Gender	GPA	2.90 (0.52)	2.83 (0.52)	1.15	312.5	= 0.250	Not significant
University	Academic stress	3.40 (0.81)	3.87 (0.62)	-5.75	273.0	< .001	Significant
University	Emotional intelligence	3.90 (0.54)	3.80 (0.62)	1.39	313.0	= 0.165	Not significant
University	GPA	2.88 (0.54)	2.86 (0.50)	0.35	299.8	= 0.727	Not significant

Note. Gender: n = 155 (male) and 160 (female); university: n = 147 (UEF) and 168 (GCUF). d = Cohen's d (absolute value reported in the text).

For academic stress, the difference between genders was significant, even though small ($d = 0.31$), with females reporting higher stress than males ($t(312.6) = -2.72$, $p = 0.007$); it was significant at the Bonferroni-adjusted alpha of .0083. The difference in GPA by gender was not significant ($d = 0.13$). The difference in EI by gender was statistically significant and medium- to large-sized ($d = 0.66$), with females scoring higher than males; females also showed a much smaller standard deviation (0.44 versus 0.66), consonant with a ceiling effect on that self-report scale. By university, academic stress differed significantly, with GCUF reporting higher stress than UEF by 0.47 scale points ($d = 0.66$, a medium- to large effect), while EI ($d = 0.16$) and GPA ($d = 0.04$) did not differ significantly. Notably, the difference in stress between the two universities does not appear to be reflected in a corresponding difference in GPA, which is consonant with the small and non-significant overall stress-GPA correlation. Because the groups are labeled by code, these differences are not attributed here to a named gender or institution. These comparisons were exploratory and were not used to test primary hypotheses.

Summary of results

Across the three primary tests, none of the null hypotheses was rejected. Students reported above-midpoint academic stress and EI. The stress-GPA estimate was small and negative but statistically non-significant, and EI was not significantly related to either stress or GPA. Since the confidence intervals include zero, the findings are compatible with no association or with small associations that the study may not have had sufficient power to detect. Supplementary comparisons suggested higher stress in GCUF students and higher EI in females.

Discussion

Principal findings

In this sample, neither of the three bivariate associations was statistically significant. Academic stress and EI were essentially unrelated; academic stress had a small negative association with GPA whose confidence interval included zero, and EI was unrelated to GPA. These results do not establish causation and should be interpreted cautiously in the context of the cross-sectional design, self-reported GPA, convenience sampling, and study-developed instruments. We include item-level tables for the sake of transparency, but item descriptive means should not be interpreted as evidence that any scale validly captures the intended construct.

The direction of the stress-GPA estimate ($r = -.085$) is consistent with the transactional account of stress (Lazarus & Folkman, 1984) and with research linking stress to impaired concentration and learning (Pascoe et al., 2020). Nevertheless, the association was small, non-significant, and compatible with zero. As hypotheses for future research—not established findings of this study—

stress might impair performance by disrupting attention and study processes; lower performance might in turn raise stress levels; or both might be influenced by some unmeasured third variables (e.g., prior achievement, course load, employment, or financial pressure). The cross-sectional bivariate design could not differentiate among these possibilities, and linear correlations would not capture a potential curvilinear association. The exploratory workload-GPA coefficient ($r = -.139$) is likewise hypothesis-generating and did not survive correction for multiple comparisons.

Emotional intelligence, stress, and GPA

The non-significant stress-EI association ($r = .013$) does not support the hypothesis that higher self-perceived EI is associated with lower reported academic stress in this sample. Possible explanations remain speculative because the relevant constructs were not independently measured. These include a mismatch between a general self-report EI measure and situation-specific stress reports; social-desirability or favourable self-presentation; restricted variability; and the possibility that only particular EI domains are relevant to academic stress. These are hypotheses for future research rather than demonstrated explanations.

The lack of association between EI and GPA, in turn, differs from the modest positive associations found in meta-analyses (MacCann et al., 2020; Perera & DiGiacomo, 2013). This could be because of measurement and sample differences or context, including use of a new scale, self-reported GPA, and a non-probability sample. It must also be borne in mind that EI is expected to have only a small direct relationship with grades relative to other correlates identified in the literature (Richardson et al., 2012). Thus, the present results neither confirm nor refute the broader literature; they indicate that, with this sample and with these instruments, EI was not meaningfully associated with grades.

Group differences

The exploratory comparisons suggest that group membership may be more strongly associated with stress and EI than with GPA in this sample. The university difference in stress ($d = 0.66$) and the gender difference in EI ($d = 0.66$) were the largest group effects. Institutional factors, assessment practices, commuting, employment, and differing self-presentation norms are plausible hypotheses, but none of these variables were measured. These explanations must not be treated as demonstrated causes; they identify questions for future research using verified gender and institution-level measures.

Practical implications

Although the results are correlational and exploratory, they have tentative implications for practice. First, the stress items endorsed most strongly by participants concerned time management and balancing employment with study, suggesting that institutions might profitably seek to alleviate these specific pressures, for example, by providing more predictable assessment schedules, advising on realistic workload, and supporting students who work. Second, because the stress-GPA association was small and not statistically significant, the present results do not, on their own, provide grounds for expecting stress-management services to raise grades; nevertheless, such services may be warranted on wellbeing grounds, given that mean stress was above the scale midpoint on all items. Third, given the lack of an observed association between EI and GPA, claims that emotional-intelligence training will raise academic achievement are not supported by the present data; such training may nevertheless be justified on other grounds, such as wellbeing and interpersonal functioning, and should be evaluated using designs that allow causal inference. Finally, the marked difference in stress between the two universities suggests that institution-level monitoring of student stress may be informative.

Directions for future research

Future research may explore several aspects of this work. It would be important to conduct a validation study of the scales with both scales, using exploratory and confirmatory factor analyses, testing for measurement invariance in gender and institution, and establishing convergent validity with existing measures, to test our assumptions about the structure of the dimensionality of the scales. Collecting GPA data from official records rather than self-report would reduce the risk of desirability bias. A longitudinal or cross-lagged design would allow the directionality of the association between stress and performance to be established. Analysis incorporating control variables such as past performance, level of study, field of study, and hours of work would allow the associations to be teased out more carefully. A probabilistic sample with a greater number of institutions would allow the findings to be generalized with more confidence. Performance-based assessments of EI could be used alongside self-report measures, and analysis conducted within domains to explore if specific competencies are associated more closely with stress or performance than is the overall composite.

Limitations

Limitations of the study include the cross-sectional design, non-probability sampling strategy, self-reporting of GPA, using study-developed measures without providing evidence of establishing validity, and a lack of details regarding the procedures used.

Because the study was cross-sectional, measures of time such as before, after, or during could not be used in testing hypotheses. The study asked participants to report on their current levels of stress, EI, and GPA at the time of testing; therefore, the association found between stress and GPA cannot show a causal relationship.

The convenience sample recruited on a quota basis cannot be generalised to populations outside the two universities from which the sample was taken, and the balance between the two groups, while convenient for comparison, does not reflect the potential heterogeneity of the student bodies involved.

Measurement is a further limitation. Both scales were developed specifically for this study and have not been validated, and the very high alpha for the stress scale may indicate item redundancy (Tavakol & Dennick, 2011), while the increase in means and standard deviation with item position should be checked with the source records. Stress and EI were self-reported on the same questionnaire, so shared method variance, response styles and social desirability may have contributed to the observed associations (Podsakoff et al., 2003). GPA was self-reported and may be inflated (Kuncel et al., 2005), which may limit observed associations by reducing variance.

Finally, the analysis was bivariate, and no covariates were included. The statistical power was adequate only for associations of around .16 or higher, and so smaller associations cannot be ruled out. Multiple tests were performed; although the decisions on the primary hypotheses were not affected by Bonferroni adjustment, the t-tests and dimension-level correlations in the exploratory analyses should be treated as hypothesis-generating rather than confirming.

Conclusion

The analysis found no statistically significant bivariate association between academic stress and EI, academic stress and GPA, or EI and GPA among the 315 undergraduates sampled; all three null hypotheses were retained. These findings should be interpreted provisionally and not as evidence that the constructs are unrelated. The stress-GPA estimate was small and negative ($r = -.085$, 95% CI $[-.194, .025]$), and the study's sensitivity power was limited to correlations of approximately .16 or larger.

Within these limitations, the study provides a transparent item-level account of academic stress and self-perceived EI in two public-sector universities and baseline bivariate association estimates with GPA. Its main provisional implication is that stress – particularly the balance of academic work with other responsibilities – was widely reported and merits institutional attention. The present data do not support claims that EI is meaningfully associated with GPA or stress, or causal or mediation claims.

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