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Research Paper

Correlates of Anxiety, Stress, Procrastination, and Emotional Reactivity in College Students

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ABSTRACT

The transition to college represents a critical developmental phase characterized by increased academic demands, evolving social roles, and heightened expectations for future career success. While this period offers opportunities for personal growth, it also exposes students to a range of psychological challenges. Among these, anxiety and stress are particularly prevalent, often influencing students' emotional and behavioral functioning. Procrastination, a common self-regulatory failure, frequently emerges as a maladaptive coping strategy in response to stress and anxiety. Emotional reactivity, reflecting the intensity and sensitivity of emotional responses, further contributes to difficulties in managing academic and personal demands. Although these constructs have been studied individually, there is a need to understand their combined influence, particularly in the Indian college context. The present study aimed to examine the interrelationships among anxiety, stress, procrastination, and emotional reactivity, as well as to explore gender differences in these variables among college students. A sample of 302 students (192 females and 110 males) aged between 18 and 25 years was selected using convenience sampling from colleges in Pune. Data were collected using standardized self-report measures, including the Generalized Anxiety Disorder Scale (GAD-7), Perceived Stress Scale (PSS-10), General Procrastination Scale (GPS), and Emotional Reactivity Scale (ERS-21). Statistical analyses included descriptive statistics, Pearson product–moment correlation, and independent samples t-tests. The findings indicated that students experienced moderate levels of anxiety, stress, procrastination, and emotional reactivity. Correlation analysis revealed significant positive relationships among all variables. Anxiety was strongly associated with stress and showed moderate correlations with procrastination and emotional reactivity. Stress demonstrated strong relationships with both procrastination and emotional reactivity, suggesting its central role in influencing behavioral and emotional outcomes. Emotional reactivity was also positively associated with procrastination, indicating that individuals with heightened emotional sensitivity may be more prone to delaying tasks. Gender differences were observed, with male students reporting significantly higher levels of anxiety and stress compared to female students. However, differences in procrastination and emotional reactivity were not statistically significant. These findings suggest that male students may experience greater internal distress, possibly due to performance-related pressures and lower tendencies to seek

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emotional support. Overall, the study highlights the interconnected and cyclical nature of psychological distress among college students. Stress appears to function as a key factor linking emotional and behavioral difficulties. The findings underscore the importance of adopting integrated intervention approaches that focus on stress management, emotional regulation, and reduction of procrastination. Such interventions can play a crucial role in enhancing students' psychological well-being and academic functioning. Despite its contributions, the study is limited by its cross-sectional design and use of convenience sampling. Future research should consider longitudinal designs and more diverse samples to further explore these relationships.

Keywords: *Anxiety, Stress, Procrastination, Emotional Reactivity, College Students, Correlation, Gender Differences*

The transition to college represents a significant developmental phase marked by increased independence, academic demands, and evolving social roles. While this period offers opportunities for personal growth, it also exposes students to multiple stressors that can affect their psychological well-being. Many students struggle to balance academic expectations, interpersonal relationships, and future career concerns, which may contribute to emotional difficulties such as anxiety and stress. These challenges are particularly relevant in the Indian educational context, where performance pressure and societal expectations are often pronounced.

Anxiety and stress are among the most common difficulties faced by college students. Anxiety often manifests as excessive worry, restlessness, and difficulty concentrating, while stress reflects the perception of being unable to cope with external demands. Together, these experiences can impair motivation, reduce academic efficiency, and contribute to maladaptive coping strategies (Barlow, Ellard, Sauer-Zavala, Bullis, & Carl, 2014). Procrastination, a behavioral tendency to delay tasks despite knowing the negative consequences, is particularly prevalent in student populations. It not only exacerbates stress but also undermines academic achievement, often serving as a behavioral expression of underlying anxiety (Sirois & Pychyl, 2013). Emotional reactivity adds another layer of complexity, as it reflects the intensity and instability of emotional responses to everyday challenges. Students who are highly emotionally reactive may struggle to regulate their feelings, leading to heightened sensitivity to stressors and greater vulnerability to anxiety and procrastination (Rothbart & Bates, 2006; Compas et al., 2017).

The interplay among these variables creates a cyclical pattern of distress. Stress amplifies anxiety, which in turn fosters procrastination, while emotional reactivity magnifies the impact of both stress and anxiety. This interconnectedness suggests that these constructs do not operate in isolation but rather reinforce one another, creating a feedback loop that can significantly impair students' academic functioning and psychological resilience. Understanding these dynamics is crucial, as they highlight the need for integrated interventions that address multiple aspects of student well-being simultaneously.

Gender differences further complicate this picture. Research indicates that male students often report higher stress and procrastination, possibly due to performance pressures and reluctance to seek emotional support, whereas female students tend to exhibit greater emotional sensitivity and anxiety (Isma & Turnip, 2019; Kessler et al., 2005). These differences underscore the importance of designing gender-sensitive interventions that acknowledge the unique challenges faced by male and female students.

Despite extensive international research on anxiety and stress, relatively few studies have examined their combined relationship with procrastination and emotional reactivity in the Indian context. Cultural factors, academic structures, and societal expectations may shape how these variables interact among Indian college students, making such investigations both timely and significant. Addressing this gap, the present study explores the correlates of anxiety, stress, procrastination, and emotional reactivity in a sample of Indian college students, with particular attention to gender differences. By doing so, it aims to contribute to a more nuanced understanding of psychological distress in educational settings and provide insights for interventions that promote healthier coping strategies, emotional regulation, and academic success.

MATERIALS AND METHODS

Objectives

1. To examine the relationship between anxiety and stress among participants.
2. To examine the relationship between anxiety and emotional reactivity.
3. To examine the relationship between stress and emotional reactivity.
4. To examine the relationship between stress and procrastination.
5. To examine the relationship between emotional reactivity and procrastination.
6. To examine gender differences in anxiety, stress, emotional reactivity, and procrastination.

Hypotheses

1. There will be a significant positive relationship between anxiety and stress among participants.
2. There will be a significant positive relationship between anxiety and emotional reactivity among participants.
3. There will be a significant positive relationship between stress and emotional reactivity among participants.
4. There will be a significant positive relationship between stress and procrastination among participants.
5. There will be a significant positive relationship between emotional reactivity and procrastination among participants.
6. There will be a significant positive relationship between anxiety and procrastination among participants.
7. There will be a significant gender difference in anxiety among participants.
8. There will be a significant gender difference in stress among participants.
9. There will be a significant gender difference in emotional reactivity among participants.
10. There will be a significant gender difference in procrastination among participants.

Participants

The study sample comprised 302 college students (192 females, 110 males) aged between 18 and 25 years. Participants were recruited from colleges in Pune using convenience sampling. All participants provided informed consent prior to data collection.

Materials

- **Anxiety: Generalized Anxiety Disorder Scale (GAD-7; Spitzer et al., 2006):** The GAD-7 is a 7-item self-report questionnaire designed to assess symptoms of generalized anxiety disorder. Each item is rated on a 4-point Likert scale (0 = "not at all" to 3 = "nearly every day"), yielding a total score ranging from 0 to 21. Higher

scores indicate greater severity of anxiety symptoms. It is widely used in both clinical and research settings due to its strong reliability and validity.

- **Stress: Perceived Stress Scale (PSS-10; Cohen, Kamarck, & Mermelstein, 1983):** The PSS-10 is a 10-item measure that evaluates the degree to which individuals perceive their lives as stressful. Items assess feelings of unpredictability, lack of control, and overload during the past month, rated on a 5-point Likert scale (0 = "never" to 4 = "very often"). Scores range from 0 to 40, with higher scores reflecting greater perceived stress. It is one of the most widely used instruments for measuring psychological stress.
- **Procrastination: General Procrastination Scale (GPS; Lay, 1986):** The GPS is a 20-item self-report scale that measures the tendency to delay tasks unnecessarily. Items are rated on a 5-point Likert scale (1 = "extremely uncharacteristic" to 5 = "extremely characteristic"), with higher scores indicating greater procrastination. The GPS captures both academic and everyday procrastination behaviors and has demonstrated strong internal consistency across student populations.
- **Emotional Reactivity:** Emotional Reactivity Scale (ERS-21; Nock et al., 2008): The ERS-21 is a 21-item measure assessing the intensity, duration, and sensitivity of emotional responses. Items are rated on a 5-point Likert scale (0 = "not at all like me" to 4 = "completely like me"), with higher scores reflecting greater emotional reactivity. The scale is particularly useful for identifying individuals who experience heightened emotional responses and difficulty regulating affect, making it relevant for studies of stress and anxiety.

All scales demonstrated strong internal consistency in the present study (Cronbach's $\alpha > .70$), consistent with prior validation studies (Steel, 2007; Compas et al., 2017).

Procedure

Data were collected using structured questionnaires administered in classroom settings. Outliers were screened using boxplots, and normality was assessed via Kolmogorov-Smirnov and Shapiro-Wilk tests. Although distributions deviated statistically from normality, skewness and kurtosis values fell within acceptable ranges (Kim, 2013), justifying the use of parametric tests. Descriptive statistics, Pearson correlations, and independent samples t-tests were conducted using SPSS. Ethical approval was obtained from the institutional review board, and confidentiality was maintained throughout.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 1 Descriptive statistics of psychological variables (N = 302)

Variable	Mean	SD	Skewness	Kurtosis
Anxiety	8.48	5.76	0.305	-0.759
Stress	17.05	9.27	-0.069	-0.254
Procrastination	58.61	19.37	-0.013	0.240
Emotional Reactivity	39.82	21.76	-0.055	-0.448

Note. All variables fall within acceptable limits of normal distribution (±1), supporting the use of parametric statistical techniques.

The descriptive statistics for the variables of anxiety, perceived stress, procrastination, and emotional reactivity provide an overview of the distribution and central tendencies of the data collected from the sample (N = 302). The mean score for anxiety (M = 8.48, SD =

5.765) indicates that participants experienced a moderate level of anxiety. The skewness value (0.305) suggests a slight positive skew, indicating that a greater number of participants reported lower anxiety levels, while the kurtosis value (-0.759) reflects a platykurtic distribution, suggesting a flatter distribution than normal. Similarly, perceived stress showed a mean score of 17.05 (SD = 9.269), indicating moderate stress levels among participants. The skewness (-0.069) and kurtosis (-0.254) values suggest that the data are approximately normally distributed with slight flattening.

Procrastination exhibited a mean score of 58.61 (SD = 19.371), indicating moderate to high levels of procrastination behaviour, along with considerable variability among participants. The skewness (-0.013) and kurtosis (0.240) values indicate an approximately symmetrical and near-normal distribution. Emotional reactivity had a mean of 39.82 (SD = 21.756), suggesting moderate levels with high dispersion. The skewness (-0.055) and kurtosis (-0.448) further confirm normality. Overall, all variables fall within acceptable limits of normal distribution (±1), supporting the use of parametric statistical techniques such as Pearson's correlation and t-tests for further hypothesis testing.

Correlation Analysis

Table 2 Pearson correlations among psychological variables

Variables	Anxiety	Stress	Procrastination	Emotional Reactivity
Anxiety	1			
Stress	.764**	1		
Procrastination	.559**	.726**	1	
Emotional Reactivity	.650**	.724**	.669**	1

*Note. *p < .01 (2-tailed). All correlations significant.*

A Pearson product–moment correlation analysis was conducted to examine the relationships among anxiety, stress, procrastination, and emotional reactivity.

The results revealed a strong positive correlation between anxiety and stress, $r = .76$, $p < .01$, indicating that higher levels of anxiety were associated with higher levels of perceived stress. Anxiety was also positively and significantly correlated with emotional reactivity, $r = .65$, $p < .01$, and procrastination, $r = .56$, $p < .01$.

Further analysis showed that stress had a strong positive correlation with emotional reactivity, $r = .72$, $p < .01$, as well as with procrastination, $r = .73$, $p < .01$. Additionally, emotional reactivity was positively correlated with procrastination, $r = .67$, $p < .01$.

All correlations were statistically significant at the 0.01 level (2-tailed), indicating robust relationships among the variables.

Hypothesis 1 predicted a significant positive relationship between anxiety and stress. The findings supported this hypothesis, as a strong positive correlation was observed ($r = .76$, $p < .01$). This suggests that individuals with higher anxiety tend to experience greater levels of stress. Hypothesis 2 stated that anxiety would be positively related to emotional reactivity. This hypothesis was supported ($r = .65$, $p < .01$), indicating that increased anxiety is associated with heightened emotional responsiveness. Hypothesis 3 proposed a significant positive relationship between stress and emotional reactivity. The results confirmed this hypothesis ($r = .72$, $p < .01$), suggesting that individuals experiencing higher stress levels

also demonstrate greater emotional reactivity. Hypothesis 4 predicted a positive relationship between stress and procrastination. This was supported by the findings (r = .73, p < .01), indicating that higher stress levels are associated with increased procrastination behaviors. Hypothesis 5 stated that emotional reactivity would be positively related to procrastination. The results supported this hypothesis (r = .67, p < .01), suggesting that individuals with higher emotional reactivity are more likely to procrastinate. Hypothesis 6 predicted a significant positive relationship between anxiety and procrastination. This hypothesis was also supported (r = .56, p < .01), indicating that higher anxiety is associated with greater procrastination.

Overall, all hypothesized relationships were supported, with significant positive correlations observed among anxiety, stress, emotional reactivity, and procrastination. These findings highlight the interconnected nature of emotional and behavioural processes, suggesting that increased anxiety and stress may contribute to heightened emotional reactivity, which in turn may lead to greater procrastination tendencies.

Gender Differences

Table 3 Independent samples t-test comparing male and female students

Variable	Female	Male	t	p-value
Anxiety	7.81	9.65	-2.71	.007
Stress	16.21	18.50	-2.07	.039
Procrastination	56.96	61.47	-1.96	.051
Emotional Reactivity	38.07	42.88	-1.86	.064

Note. Female (N=192), Male (N=110), Male students reported significantly higher anxiety and stress. Differences in procrastination and emotional reactivity were marginal.

Descriptive statistics were computed to examine gender differences in anxiety, stress, procrastination, and emotional reactivity. The results indicated that male participants (M = 9.65, SD = 5.70) reported higher levels of anxiety compared to female participants (M = 7.81, SD = 5.71). Similarly, males (M = 18.50, SD = 9.96) exhibited higher stress levels than females (M = 16.21, SD = 8.77). In terms of procrastination, male participants (M = 61.47, SD = 19.94) scored higher than female participants (M = 56.96, SD = 18.89). A similar pattern was observed for emotional reactivity, where males (M = 42.88, SD = 22.31) reported higher levels compared to females (M = 38.07, SD = 21.29).

Overall, across all variables, male participants demonstrated higher mean scores than female participants.

Hypothesis 7 proposed a significant gender difference in anxiety. The descriptive results show that males reported higher anxiety than females. This provides preliminary support, although statistical significance must be confirmed through inferential analysis (independent samples *t*-test). Hypothesis 8 predicted a significant gender difference in stress. The mean scores indicate that males experienced higher stress than females, suggesting initial support for the hypothesis, pending significance testing. Hypothesis 9 stated that there would be a gender difference in emotional reactivity. The findings show that males scored higher than females, indicating descriptive support for this hypothesis. Hypothesis 10 predicted a gender difference in procrastination. The results indicate that males reported higher levels of procrastination compared to females, again suggesting preliminary support.

The descriptive findings suggest a consistent pattern in which male participants report higher levels of anxiety, stress, procrastination, and emotional reactivity compared to female participants. This trend points toward potential gender-based differences in emotional and behavioural functioning. However, these observations require further validation through inferential statistical analysis to determine whether the differences are statistically significant.

DISCUSSION

The descriptive statistics revealed moderate levels of anxiety, stress, procrastination, and emotional reactivity among students, with distributions suitable for parametric analysis. Correlation analysis confirmed strong positive relationships among all variables, with stress emerging as a central factor strongly linked to both procrastination and emotional reactivity. Independent samples t-tests showed that male students reported significantly higher anxiety and stress, while differences in procrastination and emotional reactivity were marginal.

These findings confirm the cyclical nature of psychological distress: stress amplifies anxiety, which fosters procrastination, while emotional reactivity magnifies both. Gender differences suggest that males may face unique performance pressures and reluctance to seek support. The results align with prior research (Schneiderman et al., 2005; Sirois & Pychyl, 2013; Compas et al., 2017), reinforcing the need for interventions targeting stress management, emotional regulation, and procrastination reduction.

The strong intercorrelations observed among anxiety, stress, procrastination, and emotional reactivity support the notion of a self-reinforcing cycle of psychological distress. Stress appears to function as a triggering mechanism that intensifies anxiety, which in turn may lead to avoidance behaviors such as procrastination. Emotional reactivity further amplifies this cycle by increasing individuals' sensitivity to stressors and reducing their ability to regulate emotional responses effectively. These findings are consistent with previous research suggesting that maladaptive coping patterns often emerge from the interaction of cognitive, emotional, and behavioral factors.

CONCLUSIONS

The present study examined the relationships among anxiety, stress, procrastination, and emotional reactivity in college students. The findings revealed significant positive associations among all variables, indicating that psychological distress operates as an interconnected system. Stress emerged as a central factor, strongly influencing both emotional reactivity and procrastination.

Gender differences indicated that male students reported significantly higher levels of anxiety and stress, while differences in procrastination and emotional reactivity were not statistically significant. These results suggest the need for gender-sensitive approaches to mental health.

The study highlights the importance of integrated interventions focusing on stress management, emotional regulation, and reduction of procrastination to enhance student well-being. However, the use of convenience sampling and a cross-sectional design limits generalizability. Future research should explore these relationships using longitudinal and more diverse samples.

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Conflict of Interest

The author(s) declared no conflict of interest.

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