Academic Anxiety, Perceived Stress and Academic Procrastination Among University Students in Pakistan

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Abstract

This study aims to investigate the relationship between academic anxiety and academic procrastination, with perceived stress as a mediator, among university students in Pakistan. A quantitative correlational design was employed, and data were collected from 292 students aged 18 to 35 years, enrolled in public and private universities. Standardized measures, including the academic anxiety scale, perceived stress scale, and academic procrastination scale, were administered. Results indicate that academic anxiety is positively and significantly associated with both perceived stress and academic procrastination, while perceived stress is also positively and significantly related to academic procrastination. Mediation analysis using Hayes Process Macro 4.2 (Model 4) further demonstrates that perceived stress partially mediates the relationship between academic anxiety and academic procrastination, as the direct effect remains significant. The study emphasizes the importance of stress management and psychological support programs in reducing procrastination and enhancing academic performance among university students.

Keywords: Academic Anxiety, Perceived Stress, Academic Procrastination, University Students

Introduction

Higher education is an important period in students' lives. The academic and professional outcomes of this period have significant effects on their personal and professional lives. Obtaining admission to a university can significantly alter one's life (Zada et al., 2021). University is fundamental not only in educating students but also in stimulating their social and personal development. This development impacts both their lives as students and their future (Skoglund et al., 2021). It includes desired knowledge and academic activities completed by the students

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(Kumar et al., 2021). Students enter the university with enthusiasm to demonstrate high performance and enjoy learning opportunities, but some of them are unable to achieve their dreams (Kauser et al., 2021). These students are stuck due to academic anxiety, perceived stress, or procrastination. Anxiety affects students' persistence and contributes to passive procrastination (Hsu & Goldsmith, 2021).

Academic anxiety is mental sensitivity, perceived stress, or uneasiness in students' responses to the educational environment. It is not detrimental in all situations, but it interferes with students' memory when used at high intensity (Mahato & Jamgir, 2012). Nuriyyatiningrum et al. (2023) noted that it is an unpleasant emotional reaction in students to real or perceived danger, creating tension and fear among them. Anxiety disturbs students' cognitive, emotional, and physical behaviors. It appears as fear, avoidance, and physiological stress (Sadeghnejad et al., 2021). Students' high anxiety hinders optimal learning by promoting avoidant behaviors (Hasty et al., 2021).

Perceived stress is an expected threatening situation that is unmanageable by the individual. Stress among students refers to the inability to adopt adaptive behaviors in response to academic demands (Pontes et al., 2024). Perceived stress is psychological when students feel that environmental demands are threatening due to a shortage of personal resources. It is a serious concern about one's capacity to cope with challenges (Jangiello et al., 2024). Admission to a university can have a profound impact on a student's life. It brings considerable stress from meeting deadlines and adjusting to a new competitive environment. However, students consider the mental health issue a regular part of new life, which appears as an obstacle to addressing and curing it (Zada et al., 2021). Perceived stress results in mental, emotional, and physical adverse outcomes. It leads to ineffective individual–social relationships within the social environment (Sadeghnejad et al., 2021).

Academic procrastination refers to students' conscious behavioral delay in starting or completing academic tasks on time, despite being aware of the adverse consequences (Zada et al., 2021). Procrastination, as the unnecessary deferral of starting or completing tasks, results in experiencing unhealthy emotions such as anxiety, depression, shame, and blame, and it is a common problem among college students (Diotaiuti et al., 2021). Predictors of academic procrastination include students' anxiety and their perceived high stress levels (Cao et al., 2025). Anxiety and perceived stress cause delays in students' completion of daily academic tasks. Academic work suffers because of stress. Students often procrastinate on tasks and responsibilities due to feeling overwhelmed and unable to handle the associated stress (Shine & Lokesh, 2023).

Students' anxiety, stress, and academic procrastination may work in a triangle. A high level of passive procrastination is associated with high stress and can lead to academic failure. High levels of anxiety, impulsive reactions in stressful situations, and frequent procrastination hinder students' performance (Kuftyak, 2022). When students can handle any factor—anxiety, stress, or academic procrastination—it may play a positive role in increasing their performance. Active procrastination is more commonly observed in university settings than in school settings. It is not due to stress, but rather an intentional delay by students in achieving successful task completion (Priya et al., 2025).

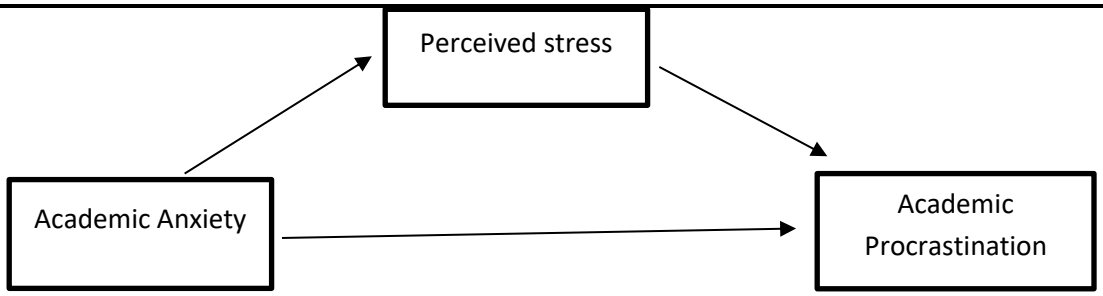
Anxiety is an affective characteristic of students. A high intensity of worry, fear, and uneasiness in academic settings hinders their ability to survive even manageable challenges. Students may face test anxiety, subject anxiety, stage anxiety, and social anxiety. It affects their everyday thinking about academic tasks and challenging activities. Anxiety increases adverse cognitive

reactions during the learning–teaching process. Their intentional focus remains on threat-related stimuli in educational events (Cassady, 2010; Nihaya et al., 2021).

Perceived stress is not an inherent characteristic of a situation; rather, it is a subjective assessment of the problem. It is an interaction between the individual and the environment. Firstly, individuals may take it as a challenge or a threat. Secondly, they may utilize their potential resources or underestimate themselves. More anxious students interact vulnerably with their academic environment. Thus, there are two types of students dealing with educational challenges. First, students who cope with challenges effectively and function adaptively to flourish in the university environment. Second, students who underestimate their personal resources to cope with academic challenges. They adopt maladaptive coping strategies in stressful environments, missing available opportunities. Positive appraisal of situations requires a conscious and effortful reappraisal process. Meanwhile, anxiety is associated with maladaptive coping behaviors like procrastination, as stress overwhelms academic challenges (Abbasi & Alghamdi, 2015; Ghattas & El-Ashry, 2024).

Academic procrastination is the act of voluntarily postponing an intended task. This delay is not due to inability or laziness. It is behavioral avoidance caused by low self-perceptions, with the educational environment perceived as a threat. Anxiety and situational stress interact to impair timely task performance (Balkis et al., 2013). According to the Attentional Control Theory (Eysenck et al., 2007), anxiety disrupts attentional regulation, impairing working memory and task efficiency. The theory is relevant to the present study as academic anxiety heightens stress by reducing students' ability to focus on academic demands. There is support for this mechanism from recent studies, and stress, in turn, fosters procrastination as a maladaptive behavioral response to cognitive overload and diminished attentional control (Bhakat et al., 2025; Cao et al., 2025; Rani, 2025).

Figure 1: Theoretical Model



Despite substantial literature regarding the relationship between academic anxiety, perceived stress, and academic procrastination among students, such studies are limited in the cultural context of Pakistan. However, it is commonly and widely observed, particularly the mediating role of perceived stress between the predictor (academic anxiety) and the outcome (academic procrastination) among university students. The study aims to fill this gap and provide useful implications for university students.

Hypotheses

1. There will be a significant and positive relationship between academic anxiety, perceived stress, and academic procrastination among university students of Pakistan.
2. Perceived stress is likely to play a significant mediating role between anxiety and academic procrastination among university students of Pakistan.

Methodology

This research was quantitative in nature, employing a correlational design to examine the relationships among anxiety, perceived stress, and academic procrastination. A purposive sampling technique was used to collect data from 292 university students in Pakistan between the ages of 18 and 35.

Three standardized instruments were administered to measure the study variables: the academic anxiety scale, the perceived stress scale, and the students' procrastination scale. The academic anxiety scale consisted of 11 items rated on a Likert scale ranging from not at all typical of me (1) to very typical of me (5), with a Cronbach's alpha of 0.91 (Cassady et al., 2019). The perceived stress scale (PSS; Cohen et al., 1994) included 10 items rated from never (0) to very often (4), with reported reliability coefficients between 0.84 and 0.91; it also contained two reverse-coded items to ensure accurate measurement. The students' procrastination scale comprised 20 items rated on a Likert scale from extremely uncharacteristic (1) to extremely characteristic (5), demonstrating strong internal consistency with a Cronbach's alpha of 0.86 (Lay, 1986).

The study adhered to the ethical guidelines outlined in the APA 7 code of conduct. Permission to use the instruments was obtained from the respective authors. Participants were provided with a consent form that explained the voluntary nature of their participation, their right to withdraw at any stage, and assurances of confidentiality. The form also clarified that no physical or psychological harm would occur. After providing consent, participants completed demographic information forms and the questionnaires within approximately 20–30 minutes. The data were then entered and analyzed using IBM SPSS (Version 26).

Results

Table 1: Characteristics of Participants (N=292)

Characteristics	*F*	*%*	*M*	*SD*
Age			22.38	3.26
Gender				
Men	172	59		
Women	120	41		
Education				
Bachelor	34	34		
Master	34	34		
Intermediate	32	32		
Socioeconomic Status				
Lower Class	74	25		
Middle Class	102	35		
Upper Class	116	40		

Note: f=Frequency, *%*= Percentage, *M*= Mean, *SD*= Standard Deviation.

The table shows that among the participants, 172 (59%) were men and 120 (41%) were women. The mean age of the participants was 22.38 years with a standard deviation of 3.26. Regarding education, 34 (12%) were at the bachelor's level, 34 (12%) at the master's level, and 32 (11%) at the intermediate level. In terms of socioeconomic status, 74 (25%) participants belonged to the lower class, 102 (35%) to the middle class, and 116 (40%) to the upper class.

Psychometric Properties

Table 2: Psychometric Properties for Scales (N=292)

Scale	*M*	*SD*	Range	Cronbach's α
Academic Anxiety Scale	23.84	5.85	12-40	.70
Perceived Stress Scale	16.07	7.01	3-39	.81
Academic Procrastination Scale	48.46	11.85	24-88	.83

Note: M= Mean, *SD*= Standard Deviation

The table presents the psychometric properties of the scales used in this study. The academic anxiety scale showed a Cronbach's α of .70, indicating acceptable and satisfactory internal consistency. The perceived stress scale demonstrated a Cronbach's α of .81, reflecting good reliability. The academic procrastination scale yielded a Cronbach's α of .83, also indicating good internal consistency. Overall, all scales used in the study demonstrated reliability above the acceptable threshold of .70.

Pearson Product Correlation

Table 3: Relationship among Study Variables (N= 292)

Variables	1	2	3
1.Academic Anxiety	-	.81**	.70**
2.Percieved Stress		-	.30**
3.Academic Procrastination			-

*Note: *p<.05, **p<.01*

The table shows that Academic Anxiety is positively and significantly correlated with perceived stress (r = .81, p < .01) and with academic procrastination (r = .70, p < .01). Additionally, perceived stress is positively correlated with academic procrastination (r = .30, p < .01). These findings indicate that higher academic anxiety and perceived stress are associated with greater procrastination among Pakistani university students.

Table 4: Mediation Analysis (N=292)

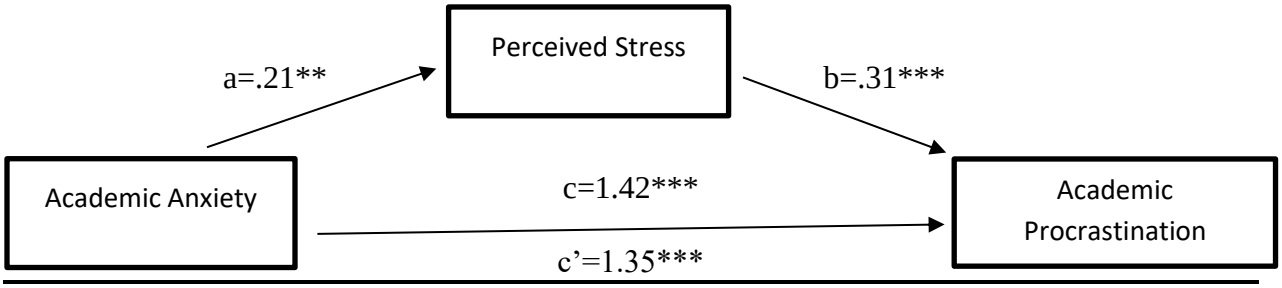
		Consequences						
		Perceived Stress (M)				AP (Y)		
Antecedents		β	*SE*	*P*		β	*SE*	*p*
Academic Anxiety (X)	a	.21	.06	.002	c'	1.35	.08	<.001
Perceived Stress (M)	-				b	.31	.06	<.001
Constant	*I*	10.92	1.69	<.001	*I*	10.96	2.14	<.001
		R^2 = .03 F = 9.70 P =.002**				R^2 = .53 F = 163.32 P < .001***		

*Note: **p*<.01, ***p*<.001, AP= Academic Procrastination

The mediation analysis indicated that academic anxiety had a significant positive effect on perceived stress, *a* = .21, *SE* = .06, *p* = .002. In turn, perceived stress significantly predicted academic procrastination, *b* = .31, *SE* = .06, *p* < .001. Even after controlling for the mediator, academic anxiety retained a significant direct effect on academic procrastination, *c'* = 1.35, *SE* =

.08, $p < .001$. The model accounted for 3% of the variance in perceived stress, $R^2 = .03$, $F(1, 290) = 9.70$, $p = .002$, and 53% of the variance in academic procrastination, $R^2 = .53$, $F(2, 289) = 163.32$, $p < .001$. These results suggest partial mediation, indicating that perceived stress partially mediates the relationship between academic anxiety and academic procrastination.

Figure 2: Statistical Model



*Note: **p<.01, ***p<.001*

The statistical model depicts that *perceived stress* partially mediates the relationship between academic anxiety (independent variable) and academic procrastination (dependent variable). Results showed that academic anxiety significantly predicted perceived stress, a = .21, $p < .01$, and perceived stress significantly predicted academic procrastination, b = .31, p < .001. The total effect of academic anxiety on academic procrastination was significant, c = 1.42, $p < .001$. When controlling for perceived stress, the direct effect of academic anxiety on academic procrastination remained significant, c′ = 1.35, $p < .001$. These findings provide evidence of partial mediation, indicating that while perceived stress explains part of the relationship, academic anxiety still has a substantial direct effect on academic procrastination.

Discussion

The present study examined the relationship between academic anxiety, perceived stress, and academic procrastination among university students in Pakistan, addressing a gap in the local cultural context. The first hypothesis was supported, as correlational analysis indicated that academic anxiety is positively associated with both perceived stress and academic procrastination. Specifically, Trevethan et al. (2022) found that higher levels of academic anxiety significantly increase students' perceived stress, while Zhang et al. (2022) reported that anxiety-related symptoms, such as hopelessness, are positively associated with procrastinatory behavior. Sirois (2023) described procrastination as a form of avoidant emotion regulation, highlighting that perceived stress can be both a cause and a consequence of delaying academic tasks. Other studies further support this relationship: Muliani et al. (2020) observed a direct link between perceived stress and procrastination, Babayigit et al. (2024) emphasized the combined influence of perceived stress and anxiety on academic behaviors, and Ashraf et al. (2019) found that procrastination predicts increased academic stress. Fitriani and Sabrial (2023) also reported a positive correlation between perceived stress and procrastination, while research by Vivar-Bravo et al. (2021), Roshanisefat et al. (2021), Rezaei-Gazki et al. (2024), Sari and Hazim (2023), and Kuftyak (2022) consistently showed that higher academic anxiety is associated with greater procrastination across diverse student samples.

The significant positive correlation between academic anxiety and procrastination indicates that Pakistani university students with higher anxiety are more likely to delay academic tasks. This may be due to anxiety consuming cognitive and emotional resources, reducing task engagement. Cultural and educational pressures in Pakistan, such as high academic expectations, may further amplify perceived stress and procrastinatory behaviors.

The second hypothesis, tested through mediation analysis using Hayes Process Macro 4.2 (Model 4), was partially supported. Findings indicate that perceived stress mediates the relationship between academic anxiety and procrastination, though only partially. This is consistent with earlier evidence suggesting perceived stress influences maladaptive academic behaviors (Fincham & May, 2021). The partial mediation suggests that, while perceived stress depletes students' cognitive and emotional resources, contributing to procrastination, other factors, such as poor self-regulation, inadequate time management, and ineffective coping strategies, also play a role. Hence, perceived stress accounts for part of the relationship, but additional psychological and behavioral mechanisms remain influential.

Conclusion

The study found that academic anxiety is positively and significantly associated with both perceived stress and academic procrastination among university students in Pakistan. Mediation analysis depicts perceived stress significantly predicts procrastination and partially mediates the relationship between anxiety and procrastination as the direct effect of academic anxiety on academic procrastination was significant. These findings highlight the impact of psychological stress on students' academic behaviors. Interventions targeting stress management could help reduce procrastination.

Limitations and Recommendations

This study is limited by its cross-sectional design, which restricts the ability to infer causal relationships between academic anxiety, perceived stress, and procrastination. The reliance on self-report questionnaires may also have introduced bias, as participants could have underreported or overreported their experiences. Additionally, the sample was drawn exclusively from Pakistani universities, which may limit the generalizability of findings to students in other cultural or educational contexts. Future research should employ longitudinal or experimental designs, include more diverse student populations, and examine other mediating or moderating factors such as coping strategies, self-regulation, and social support to provide a more comprehensive understanding of these relationships.

Implications

The findings have several important implications for higher education. Universities should focus on providing stress management programs and counseling services, as these can help reduce the adverse effects of academic anxiety on procrastination. Teachers can support students by creating a positive and supportive learning environment that helps manage stress more effectively. Policymakers could allocate resources to mental health programs in universities to improve student well-being. Including time management, coping skills, and resilience training in the curriculum can equip students with practical tools to manage anxiety and stress effectively. Cross-cultural studies can test these findings in different countries and help design interventions that work for various student populations. Ultimately, the study provides a foundation for future research on the connections between emotions, stress, and academic behaviors.

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