Bridging Academic Stress and Burnout: Procrastination as a Mediator and Implications for Education Policy

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ABSTRACT

Purpose of the study: This study aimed to examine the mediating role of academic procrastination in the relationship between academic stress and burnout among college students in Regions XI and XII, Philippines.

Methodology: The study employed a quantitative, non-experimental correlational design. Data were collected through an online survey consisting of 64 items rated on a 5-point Likert scale. A sample of 250 college students was selected using stratified random sampling, and data were analyzed using SmartPLS 4.0 and bootstrapping with 5,000 resamples.

Main Findings: The results showed that academic stress significantly predicts burnout ($\beta = 0.394$, p < 0.001), while procrastination mediates this relationship by amplifying stress and increasing emotional exhaustion ($\beta = 0.411$, p < 0.001). These findings highlight stress as a critical factor in driving burnout and demonstrate the importance of addressing procrastination to improve student well-being.

Novelty/Originality of this study: This study advances knowledge by exploring the mediating role of procrastination in the stress-burnout relationship, which has been underexplored in the literature. It highlights practical implications for community-based education policies and strategies to enhance student resilience and mitigate burnout in academic settings.

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1. INTRODUCTION

Academic burnout, characterized by extreme fatigue, loss of interest, and diminished academic performance, is an increasingly prevalent issue among students [1]. This condition significantly affects mental health, reduces academic motivation, and increases dropout rates [2]. Academic stress—stemming from the pressure of academic responsibilities and high expectations—is identified as a primary factor contributing to burnout [3]. Given the detrimental consequences of burnout on student well-being and success, identifying factors that exacerbate or mitigate its effects is crucial.

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The influence of academic stress extends beyond the individual, posing broader societal challenges. High levels of stress and subsequent burnout are correlated with increased dropout rates, which can contribute to unemployment and hinder economic growth [4], [5]. Students who leave education prematurely due to burnout often face limited career opportunities, perpetuating cycles of poverty and economic inequality [6], [7].

Academic procrastination, defined as the habitual delay of tasks despite foreseeable negative outcomes [8], [9], has emerged as a critical variable in the stress-burnout dynamic. Procrastination can intensify stress by creating a feedback loop where delayed tasks accumulate, increasing the pressure and likelihood of burnout [10]. While existing research has extensively explored the individual effects of academic stress, procrastination, and burnout, limited studies examine procrastination's mediating role in the relationship between stress and burnout [10], [11].

Previous studies have primarily investigated the direct impacts of stress and procrastination on burnout, neglecting the potential interconnectedness of these variables. For instance, research by Schraw et al. [12] underscores procrastination's compounding effects on stress and burnout, while Haghbin [11] highlight procrastination as a maladaptive coping mechanism that exacerbates academic challenges. However, there remains a research gap regarding how procrastination functions as a mediator in the stress-burnout relationship. This gap is critical to address, as procrastination—a controllable behavior—may provide actionable insights into mitigating burnout.

From a Social Science perspective, understanding the mediating role of procrastination is particularly significant as it offers insights into behavioral patterns that contribute to larger societal issues, such as student attrition and underemployment. By identifying procrastination as a modifiable factor within the stress-burnout dynamic, this study provides a basis for developing evidence-based interventions that can improve student outcomes and societal well-being. Furthermore, exploring these relationships contributes to a deeper understanding of how cultural norms, social pressures, and educational structures shape academic experiences.

This study aims to bridge this gap by investigating whether academic procrastination mediates the relationship between academic stress and burnout. Specifically, it explores how procrastination intensifies the effects of stress on burnout among higher education students in Regions XI and XII, Philippines. Understanding these relationships will contribute to the literature by clarifying the mechanisms through which stress translates into burnout and identifying intervention points to reduce procrastination's adverse impacts. Consequently, this research provides a foundation for developing targeted programs and strategies to enhance student well-being and academic outcomes. The research questions are as follows:

- 1. Does academic procrastination mediate the relationship between academic stress and academic burnout among higher education students in Regions XI and XII, Philippines?
- 2. What is the relationship between academic procrastination, academic stress, and academic burnout among higher education students in Regions XI and XII, Philippines?

2. THEORETICAL FRAMEWORK

This study examines how academic procrastination mediates the relationship between academic stress and burnout among college students in Regions XI and XII in the Philippines. Academic stress is defined as the pressure students face due to school responsibilities, expectations, and heavy workloads [13]. According to Lazarus and Folkman's Transactional Model of Stress and Coping [14], stress occurs when students feel their academic demands exceed their ability to cope. Research by Zhang et al. [15] examines how stress can lead to procrastination, which in turn exacerbates stress level, that stress often leads to procrastination. The Temporal Motivation Theory (TMT) [16] explains that procrastination happens when students choose short-term rewards over long-term goals. While procrastination might temporarily ease stress, it often causes tasks to pile up, increasing stress and eventually leading to burnout.

To provide a broader perspective, this study also integrates Bronfenbrenner's Ecological Systems Theory [17] to examine how the social environment influences academic stress, procrastination, and burnout. This theory highlights the importance of social systems, including family, peers, school, and community, in shaping students' experiences [18]. For instance, strong family support can serve as a buffer against academic stress, while peer influence might either reduce or increase procrastination tendencies. Similarly, institutional support, such as guidance counseling services, can help students develop effective coping mechanisms to prevent burnout.

The interaction between psychological and social factors creates a more holistic understanding of the issue. The Transactional Model of Stress and Coping emphasizes individual appraisal and coping strategies, while the Ecological Systems Theory underscores the role of external support systems. Together, these frameworks illustrate how academic stress is not just a psychological challenge but also a social issue. For example, a student's inability to manage stress may stem from inadequate social support, such as a lack of resources from educational institutions or negative peer influences. Understanding this intersection allows for an interdisciplinary approach to addressing academic stress, procrastination, and burnout.

This combined framework suggests that addressing burnout requires both individual-level interventions (e.g., time management training) and social-level interventions (e.g., institutional reforms, peer mentoring

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programs). The interdisciplinary perspective enhances the study's ability to propose practical recommendations that account for the interplay between psychological and social dimensions of academic challenges.

3. RESEARCH METHOD

3.1. Research Design

This study employed a quantitative approach, specifically a non-experimental correlational design to examine the relationships among various factors and the influence of procrastination affects these relationships. The research was conducted in Regions XI and XII, Philippines, with college students from various schools in these areas taking part. Quantitative research, according to Creswell and Creswell [18], involves collecting, analyzing, and understanding data, usually through experiments or surveys. This approach tests hypotheses by exploring the relationships between variables, using numerical data that are statistically analyzed to derive the results.

Mediation analysis is a method used in statistics to see how one variable affects another through a third variable, known as the mediator. It helps track how the independent variable influences the mediator, which then impacts the dependent variable [19]. This method enables a deeper understanding of the cause-and-effect relationships between the variables. An online survey consisting of 64 questions, divided into three sections, employed a 5-point Likert scale to assess the key research variables. The questions about academic procrastination were based on McCloskey and Scielzo [20], the academic stress questions were taken from Bedewy and Gabriel [21], and the burnout questions were adapted from Bresó and Salanova [22].

3.2. Research Subjects

A power analysis was conducted to determine the recommended sample size for the study. Using G*Power 3.1.9.6 (NCBI, 2019), it was calculated that a sample size of N=89 would provide 80% power to detect a medium effect size ($f^2=0.15$) at a significance level of 0.05. However, the study was ultimately conducted with 250 college students enrolled in various academic programs across Regions XI and XII in the Philippines. Participants were selected through stratified random sampling, ensuring representation from diverse academic institutions and demographics within the study regions. This technique divides the population into smaller, more homogeneous subgroups.

3.3. Data Collection Instruments and Techniques

Data were collected through an online survey comprising 64 questions divided into three sections, each using a 5-point Likert scale to assess the key constructs. The instruments included Academic Procrastination Scale by McCloskey and Scielzo [20], Perceived Academic Stress Scale by Bedewy and Gabrie [21], and Burnout Assessment Scale adapted from Bresó and Salanova [22]. The survey was distributed through social media platforms and email to maximize accessibility for the target population.

3.4. Data Analysis Techniques

Data analysis was conducted using SmartPLS 4.0, which applied Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine the mediating effects of academic procrastination. Bootstrapping with 5,000 resamples was used to assess the indirect effects. Bootstrapping is a method used in mediation analysis to estimate the sampling distribution of a statistic [25].

The validity and reliability of the measurement model were evaluated through several metrics, including Cronbach's alpha, composite reliability (rho_a and rho_c), average variance extracted (AVE), and the heterotrait-monotrait ratio (HTMT). The average variance extracted (AVE) quantifies the proportion of variance explained by a construct relative to its measurement error, as outlined by Santos and Cirillo [26]. Meanwhile, the heterotrait-monotrait ratio (HTMT) assesses discriminant validity, ensuring that constructs are distinct from one another [27].

4. RESULTS AND DISCUSSION

Prior to conducting the mediation analysis, the researchers verified the measurement model's validity and reliability. The degree of internal consistency in a measurement is referred to as its reliability [28]-[30]. This shows that when reliability is high, the observed scores primarily reflect the measured concept. When dependability is low, the recorded ratings are mostly a result of measurement error. Validity refers to the empirical evidence and theoretical reasoning that support a score's comprehension and interpretation [31], [28].

Cronbach's alpha was used to assess the internal consistency of the measurement tools. According to Taber [32], Cronbach's alpha is frequently used in scientific education investigations, especially when statistics and test formats are involved. As a result, alpha values of 0.70 and above are generally considered acceptable. Furthermore, in statistics, average variance extracted (AVE) was commonly used to validate constructs. This method uses adaptive linear regression to demonstrate that the stated models are highly efficient [26]. AVE values are accepted if they are greater than or equal to 0.50 [33].

Cronbach's alpha, composite reliability (rho_a), and composite reliability (rho_c) were used to evaluate the reliability of the instruments in this study. The reliability analysis, as shown in Table 1, demonstrates that the

instruments used to measure Academic Stress, Academic Burnout, and Academic Procrastination exhibit a high level of internal consistency. All of the constructs have Cronbach's alpha values more than 0.70, with Academic Procrastination having the highest alpha value of 0.907, indicating strong reliability. The composite reliability values (rho_a and rho_c) all exceed the 0.70 threshold, further supporting the credibility of the findings. This confirms that the measurement model has a high level of internal consistency.

The Average Variance Extracted (AVE) values are satisfactory for assessing validity. Academic Stress, Academic Burnout, and Academic Procrastination have AVE values of 0.502, 0.517, and 0.517, respectively. These values meet or above the 0.50 threshold, as stated by Fornell and Larcker [33]. It demonstrates that the observed factors account for a significant amount of the variability in these concepts, validating their convergent validity.

This confirms that the constructs measure distinct concepts, which is critical for the theoretical rigor of the model. Moreover, it provides more evidence to support the measurement model by showing that the constructs being measured are empirically separate and internally reliable. As demonstrated by Cronbach's alpha and composite reliability, the measurement approach exhibits strong reliability and validity. The findings of this study provide a solid and credible basis for conducting further mediation analysis, confirming that the defined theoretical concepts are accurately reflected in the measured constructs.

Table 1. Construct Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)		
Academic Stress	0.831	0.840	0.874	0.502		
Exhaustion	0.843	0.808	0.868	0.530		
Cynicism	0.889	0.939	0.909	0.626		
Academic Efficacy	0.880	0.898	0.917	0.736		
Academic Inefficacy	0.909	0.910	0.932	0.733		
Burnout	0.743	0.769	0.835	0.517		
Procrastination	0.907	0.919	0.921	0.517		

The constructs' distinctiveness is empirically supported by the HTMT ratios. The Heterotrait-Monotrait (HTMT) ratios of correlations were all below the conservative threshold of 0.85, establishing discriminant validity [25]. This confirms that the constructs measure distinct concepts, which is crucial for the theoretical rigor of the model. This provides more evidence to support the measurement model by showing that the constructs being measured are empirically separate and internally reliable. As demonstrated by Cronbach's alpha, composite reliability, AVE values, and HTMT ratios, the measuring approach exhibits strong reliability and validity. The findings of this study provide a solid and credible basis for conducting additional mediation analysis. They verify that the defined theoretical concepts are appropriately reflected in the measured constructs.

Table 2. Heterotrait-Monotrait (HTMT)

	Academic Stress	BA	BAI	BC	BE	Burnout	Procrastination
Academic Stress							
Exhaustion	0.320						
Cynicism	0.210	0.602					
Academic Efficacy	0.292	0.356	0.674				
Academic Inefficacy	0.638	0.230	0.212	0.510			
Burnout	0.689	0.407	0.522	0.806	0.582		
Procrastination	0.413	0.144	0.403	0.544	0.561	0.676	

This study explores the relationships between academic stress, procrastination, burnout, and behavioral outcomes through mediation analysis. The results indicate that academic stress increases both procrastination and burnout, whereas procrastination acts as a mediator, further amplifying burnout. Burnout significantly influences behavioral engagement and avoidance but does not substantially affect behavioral approaches, demonstrating a complex interaction with individual activities. These findings provide valuable insights into the psychological and behavioral challenges faced by students and represent the significance of focused interventions to reduce stress, control procrastination, underscoring the importance of targeted interventions to reduce stress, manage procrastination, and enhance engagement in academic settings [34]. The significant path coefficient ($\beta = 0.394$, t = 6.053, p < 0.001) highlights academic stress as a key predictor of burnout. This aligns with Cheung and Lau [35], who emphasized stress as a primary cause of burnout. These findings indicate that persistent stress affects emotional control and cognitive functioning, resulting in exhaustion and low academic performance. In a similar way to the study of [34] found that strong academic demands contribute to emotional fatigue, a core characteristic of burnout. They observed that time limits and academic pressure exacerbate stress, generating weak psychological effects. The significant correlation between academic stress and procrastination ($\beta = 0.384$, t = 6.279, p < 0.001) shows the notion that stress promotes procrastination as a coping strategy.

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Hayes [36] argued that students procrastinate due to academic pressures, which in turn increases their stress. Sirois [10] investigated the role of procrastination as a maladaptive coping strategy, showing that students who delay tasks experience heightened stress levels and decreased task performance. The impact of procrastination on burnout ($\beta = 0.411$, t = 6.350, p < 0.001) indicates its function as a mediator. Ramayah et al. [37] found that procrastinating increases emotions of inadequacy and guilt, leading to emotional weariness and depersonalization in academic settings. Kandemir et al. [38] investigated the correlation between procrastination and mental exhaustion, demonstrating that it exacerbates burnout by increasing work delay and perceived weakness. Burnout decreases participation in learning activities, highlighting the negative effects on academic drive and dedication [39] ($\beta = 0.935$, t = 75.617, p < 0.001) as well as avoidance of behavior limits ($\beta = 0.375$, t = 5.969, p < 0.001). Nonetheless, it does not substantially influence the behavioral approach ($\beta = 0.119$, t = 0.690, p = 0.490), suggesting variety in the effects of burnout on particular actions.

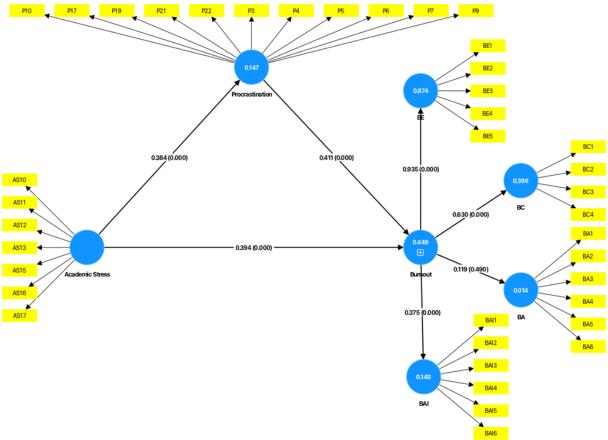


Figure 1. Mediation Analysis- Results using SmartPLS 4.0

The SmartPLS 4.0 mediation analysis provides significant insight on the relationships between academic stress, burnout, and procrastination and the way these affect various academic outcomes. As stated in Figure 1, the analysis evaluated the model's direct, indirect, and total effects.

The finding of this study revealed that burnout greatly enhances the number of academic outcomes, specifically BE (O = 0.935, p < 0.000) and BC (O = 0.630, p < 0.000). These results indicate that low academic engagement and less academic achievement are connected with increased levels of burnout. This is in accordance with studies by Schaufeli et al. [2] and Dyrbye et al. [40], which emphasize the negative impact of burnout on student involvement and academic performance. It is significant to highlight that Burnout's direct effect on BA was not statistically significant (O = 0.119, p = 0.490), indicating that Burnout alone has no significant impact on this particular outcome. This suggests that the relationship between academic success and burnout may be influenced by additional mediating factors. Additionally, Students who delay are more likely to have a higher level of burnout, corresponding to the significant relationship between procrastination and burnout (O = 0.411, p < 0.000). According to research by Sirois [10] and Stell [8], procrastination might exacerbate stress and cause burnout, which can create a negative cycle for students. Low VIF values (< 5) suggest the absence of multicollinearity problems, which ensures the model's stability. This enhances the accuracy of regression figures, as indicated by Hair et al. [41].

Table 3. The direct effects, indirect effects, and total effects on the relationships between variables- Academic procrastination. Academic Stress, and Academic Burnout.

	0	M	STDEV	O/STDEV	F ²	P ²	VIF	Bias	2.5%	97.5%
	U	IVI	SIDEA	O/SIDE V	Г-	Ρ-	VIL	Dias	2.5%	97.5%
Academic Stress -> Burnout	0.394	0.394	0.065	6.053	0.240	0.000	1.173	0.000	0.266	0.522
Academic Stress -> Procrastination	0.384	0.394	0.061	6.279	0.173	0.000	1.000	0.010	0.247	0.488
Procrastination -> Burnout	0.411	0.412	0.065	6.350	0.262	0.000	1.173	0.000	0.279	0.532
Indirect Effects										
Academic Stress -> Procrastination -> Burnout	0.158	0.162	0.039	4.392		0.000				
Total effects										
Academic Stress -> Procrastination -> Burnout	0.552	0.556	0.055	10.035		0.000				
R-squared= 0.449										
Adjusted R-squared = 0.444										

Based on the R-squared value of 0.449, it can be inferred that the model effectively explains a significant percentage of the variability observed in burnout. The adjusted R2 value of 0.444 indicates the robustness of the model when the number of predictors is taken into account. In summary, the results emphasize the significance of direct and indirect mechanisms in comprehending the way in which academic stress impacts burnout AI. Furthermore, they provide insight into the mediating function of trust in this association.

The findings of this study highlight how academic stress, procrastination, and burnout can disproportionately impact students from marginalized or low-resource communities. These students often face systemic inequalities in accessing educational resources, including academic counseling and psychological support, which exacerbate their stress levels and limit their coping mechanisms [42], [43]. Moreover, current education policies, such as high-stakes testing and rigid curricula, contribute to these challenges by creating environments that prioritize performance over well-being [44], [46]. Addressing these disparities through inclusive policies and resource allocation can mitigate the effects of academic stress and promote equitable learning environments.

The study's findings carry significant implications for education policy, particularly in addressing the social pressures faced by students. High-stakes academic environments often exacerbate stress and procrastination, leading to burnout and reduced engagement [3], [47]-[50]. Policies that prioritize holistic education, including stress management programs and access to mental health resources, can alleviate these challenges. For example, integrating emotional intelligence training into the curriculum may help students balance academic demands while fostering positive coping strategies. Such policy interventions are essential in reducing academic inequalities and enhancing the overall quality of education systems.

The results of this study are consistent with previous research that has emphasized the critical mediating function of burnout in the relationship between academic stress and a variety of negative outcomes. For example, prior research has demonstrated that academic stress can indirectly contribute to adolescent depression through school burnout, with the severity of this relationship being influenced by self-esteem [51]. These discoveries emphasize the importance of investigating the ways in which burnout serves as a bridge between academic stress and the mental health and academic success of students. The relationship between burnout and procrastination is similarly extensively documented in the existing literature.

Findings in these studies contribute to our theoretical comprehension of how procrastination exacerbates burnout and adversely affects academic performance in a student. Burnout regularly demonstrates a significant correlation between procrastination and increased levels of exhaustion [52]. Academic emotions function as an intermediary in this interaction. Hall et al. [53] have provided additional evidence that implies a positive correlation between procrastination and exhaustion in higher education faculty, with self-efficacy serving as a protective factor against these detrimental effects. Additionally, Mohammadi et al. [54] emphasize the significance of providing academic support and fostering optimistic attitudes toward future careers to reduce procrastination by addressing burnout. These findings highlight the critical role of institutional support and career guidance in helping students manage academic pressures and minimize procrastination.

The stress-strain model, as described by Lazarus and Folkman [14], suggest that when individuals face stressors such as academic demands and lack effective coping mechanisms, they may experience strain, which manifest as negative outcomes like exhaustion and reduced performance. Thus, highlighting the need for stress management programs, such as promoting emotional intelligence, helps students manage stress [55]. Therefore, it reduces the chance of procrastination by students, making them not prioritize short-term rewards over long-term goals, as explained by the Temporal Motivation Theory. Procrastination, a behavioral stressor, exacerbates this dynamic by increasing the perceived burden and emotional strain, resulting in increased levels of academic fatigue and burnout. Academic emotions serve as intermediaries in this process, as evidenced by research that consistently establishes a correlation between procrastination and increased exhaustion [52]. These results

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indicate that procrastination exacerbates strain by enhancing stress responses, thereby adversely impacting academic outcomes within the stress-strain model.

This study underscores the importance of addressing academic stress and burnout as a pathway to fostering key character traits such as resilience, self-regulation, and emotional intelligence in students. These traits are critical not only for academic success but also for overall personal development and community well-being [56]-[59]. By equipping students with strategies to manage stress and overcome procrastination, educators can contribute to the development of socially responsible individuals who are better prepared to contribute to their communities. For example, interventions such as mindfulness programs or peer-support groups can enhance students' ability to cope with challenges, thereby strengthening their social and emotional capacities.

The findings of this study extend beyond academic psychology and contribute to the broader Social Sciences by elucidating the impact of societal norms and institutional structures on student well-being. The competitive nature of education systems, shaped by cultural expectations and economic pressures, perpetuates academic stress and maladaptive behaviors such as procrastination [60], [61]. This aligns with sociological theories that highlight how institutionalized stressors reinforce existing patterns of social inequality. These results call for a multidisciplinary approach to addressing academic stress, integrating insights from sociology, education policy, and psychology to create holistic solutions.

Additionally, the results suggest that embedding social value-based education into curricula can play a crucial role in mitigating academic stress and burnout. By promoting values such as empathy, collaboration, and ethical decision-making, educators can create learning environments that support both academic success and character development [62]-[66]. For instance, introducing programs that emphasize teamwork and collective problem-solving may help students manage stress more effectively, while fostering a sense of purpose and social responsibility. These approaches not only address immediate academic challenges but also contribute to long-term community well-being by preparing students to navigate complex social environments.

This study was conducted in Regions XI and XII of the Philippines, which limits the generalizability of the findings to other regions or cultural contexts. Cross-cultural and cross-regional research is needed to test the applicability of these results in diverse settings, as differences in educational systems, cultural norms, and socioeconomic conditions may influence how academic stress, procrastination, and burnout manifest. Additionally, the reliance on self-reported survey data introduces the potential for response bias, which may not fully capture the complexities of students' experiences. Expanding future research to include qualitative methods or mixed-method designs could provide a deeper understanding of these issues.

A significant limitation of this study is its cross-sectional design, which captures data at only one point in time. Longitudinal studies are essential to track the progression of stress, procrastination, and burnout over time and to examine how these factors interact within broader social frameworks, including family and institutional influences. Future research should also evaluate the effectiveness of interventions, such as time management training, mindfulness programs, and resilience-building initiatives, to mitigate these challenges. By incorporating these approaches, future studies can offer actionable insights for policymakers and educators to develop holistic strategies that enhance student well-being and academic success.

5. CONCLUSION

The study found that academic procrastination strongly influences academic stress. Stress, in turn, plays a big role in connecting procrastination and burnout among college students in Region XI and Region XII, Philippines. While procrastination by itself doesn't directly lead to burnout, it significantly contributes to burnout through the stress it causes. This shows that stress is a key factor that drives burnout. The study also highlighted that proper time management and staying focused can help reduce stress, which can lead to better academic performance. The results of the study were highly reliable, as shown by the high R-squared values. This means that creating programs to address procrastination, stress, and burnout can greatly improve students' overall well-being and academic success.

Beyond academic psychology, this study contributes to the Social Sciences by shedding light on how systemic academic pressures and individual coping mechanisms interplay to affect students' mental health and performance. The results underscore the relevance of social and educational policies aimed at reducing stressors in academic environments. For instance, policies promoting balanced workloads, access to mental health services, and stress management programs can help alleviate the pressures that contribute to procrastination and burnout.

The findings also have practical implications for the development of community-based programs that support student well-being. Collaborative initiatives between educational institutions, local governments, and community organizations can foster environments that promote resilience, time management, and emotional regulation among students. Such programs can include peer mentoring, stress reduction workshops, and social value-based education initiatives that encourage empathy, teamwork, and self-discipline. These interventions not only address immediate academic challenges but also contribute to long-term community well-being by nurturing socially responsible and emotionally resilient individuals.

This study addresses the issues of academic stress, procrastination, and burnout. Schools should offer time management workshops to help students break down tasks into smaller steps and prioritize deadlines. These

workshops could teach practical skills to prevent procrastination, which is known to increase stress. Mental health support programs, such as peer counseling and stress management sessions, should also be introduced to help students cope with academic pressures and avoid burnout. Teachers should also be trained to recognize when students are struggling with stress or burnout. By making workloads more manageable and providing open communication channels, they can create a more supportive learning environment.

REFERENCES

- [1] C. Maslach and M. P. Leiter, "Understanding the burnout experience: Recent research and its implications for psychiatry," *World Psychiatry*, vol. 15, no. 2, pp. 103–111, Apr. 2016, doi: 10.1002/wps.20311.
- [2] W. B. Schaufeli, I. Martinez, A. M. Pinto, M. Salanova, and A. B. Bakker, "Burnout and engagement in university students: A cross-national study," [Unpublished].
- [3] L. Y. Lin and H. M. Huang, "Academic burnout and emotional exhaustion among students: A meta-analysis," *J. Educ. Psychol.*, vol. 112, no. 3, pp. 456–472, Jun. 2014, doi: 10.1037/edu0000152.
- [4] N. Nurmalitasari, Z. A. Long, and M. F. M. Noor, "Factors influencing dropout students in higher education," *Educ. Res. Int.*, vol. 2023, pp. 1–13, 2023, doi: 10.1155/2023/7704142.
- [5] M. Pascoe, S. Hetrick, and A. Parker, "The impact of stress on students in secondary school and higher education," *Int. J. Adolesc. Youth*, vol. 25, pp. 104–112, 2020, doi: 10.1080/02673843.2019.1596823.
- [6] V. Realinho, J. Machado, L. Baptista, and M. Martins, "Predicting student dropout and academic success," *Data*, vol. 7, p. 146, Nov. 2022, doi: 10.3390/data7110146.
- [7] G. Gobena, "Effects of academic stress on students' academic achievements and its implications for their future lives," *Int. J. Instr.*, vol. 2024, pp. 918–a, 2024, doi: 10.29333/aje.2024.918a.
- [8] P. Steel, "The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure," *Psychol. Bull.*, vol. 133, no. 1, pp. 65–94, Jan. 2007, doi: 10.1037/0033-2909.133.1.65.
- [9] D. M. Tice and R. F. Baumeister, "Longitudinal study of procrastination, performance, stress, and health: The costs and benefits of dawdling," *Psychol. Sci.*, vol. 8, no. 6, pp. 454–458, Nov. 1997, doi: 10.1111/j.1467-9280.1997.tb00460.x.
- [10] F. M. Sirois, "Procrastination and stress: Exploring the role of self-compassion," *Self Identity*, vol. 13, no. 2, pp. 128–145, Apr. 2014, doi: 10.1080/15298868.2013.763404.
- [11] M. Haghbin, A. McCaffrey, and T. A. Pychyl, "The complexity of the relation between fear of failure and procrastination," *J. Rational-Emotive Cogn.-Behav. Therapy*, vol. 30, no. 4, pp. 249–263, Dec. 2012, doi: 10.1007/s10942-012-0153-9.
- [12] G. Schraw, T. Wadkins, and L. Olafson, "Doing the things we do: A grounded theory of academic procrastination," *J. Educ. Psychol.*, vol. 99, no. 1, pp. 12–25, Jan. 2007, doi: 10.1037/0022-0663.99.1.12.
- [13] H. Sailo and V. Varghese, "Academic stress, its sources, effects, and coping mechanisms among college students," *Int. J. Sci. Health Res.*, vol. 9, no. 3, pp. 124–132, Mar. 2024, doi: 10.52403/ijshr.20240316.
- [14] R. S. Lazarus and S. Folkman, Stress, Appraisal and Coping. Springer Publishing, New York, 1984.
- [15] Y. Zhang, S. Dong, W. Fang, X. Chai, and J. Mei, "The interplay of academic procrastination, self-generated stress, and academic performance: A serial mediation model," *BMC Psychol.*, vol. 12, Article 105, 2024, doi: 10.1186/s40359-024-02105-w.
- [16] P. Steel and C. J. König, "Integrating theories of motivation," Acad. Manage. Rev., vol. 31, no. 4, pp. 889–913, Oct. 2006, doi: 10.5465/amr.2006.22527462.
- [17] A. Özdoğru, "Bronfenbrenner's Ecological Theory," in *Encyclopedia of Child Behavior and Development*, S. Goldstein and J. A. Naglieri, Eds. Boston, MA: Springer, 2011, doi: 10.1007/978-0-387-79061-9_940.
- [18] J. W. Creswell and J. D. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 6th ed. SAGE Publications, 2023.
- [19] B. Kim, "Introduction to mediation analysis," *University of Virginia Library*, 2016, https://library.virginia.edu/data/articles/introduction-to-mediation-analysis
- [20] J. McCloskey and S. A. Scielzo, "Finally!: The development and validation of the academic procrastination scale," [Manuscript submitted for publication], 2015, doi: 10.13140/RG.2.2.23164.64640.
- [21] D. Bedewy and A. Gabriel, "Examining perceptions of academic stress and its sources among university students: The perception of academic stress scale," *Health Psychol. Open*, vol. 2, no. 2, 2015, doi: 10.1177/2055102915596714.
- [22] E. Bresó, M. Salanova, and W. B. Schaufeli, "In search of the 'third dimension' of burnout: Efficacy or inefficacy?," *Appl. Psychol.*, vol. 56, no. 3, pp. 460–478, Jul. 2007, doi: 10.1111/j.1464-0597.2007.00290.x.
- [23] National Center for Biotechnology Information (NCBI), "National Center for Biotechnology Information," *National Library of Medicine*, 2019, https://www.ncbi.nlm.nih.gov/
- [24] A. Hayes, "How stratified random sampling works, with examples," *Investopedia*, Mar. 23, 2023, https://www.investopedia.com/terms/stratified_random_sampling.asp
- [25] C. M. Ringle, S. Becker, and J.-M. Wende, *SmartPLS 4*. Oststeinbek: SmartPLS, 2022, https://www.smartpls.com/documentation/algorithms-and-techniques/bootstrapping

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[26] P. M. D. Santos and M. Â. Cirillo, "Construction of the average variance extracted index for construct validation in structural equation models with adaptive regressions," *Commun. Stat. Simul. Comput.*, vol. 52, no. 4, pp. 1639–1650, 2021, doi: 10.1080/03610918.2021.1888122.

- [27] J. Henseler, C. M. Ringle, and M. Sarstedt, "A new criterion for assessing discriminant validity in variance-based structural equation modeling," *J. Acad. Market. Sci.*, vol. 43, no. 1, pp. 115–135, Jan. 2014, doi: 10.1007/s11747-014-0403-8.
- [28] O. Gonzalez and D. P. MacKinnon, "The measurement of the mediator and its influence on statistical mediation conclusions," *Psychol. Methods*, vol. 26, no. 1, pp. 1–10, Jan. 2021, doi: 10.1037/met0000263.
- [29] L. S. Feldt and R. A. Charter, "Estimating the reliability of a test split into two parts of equal or unequal length," *Psychol. Methods*, vol. 8, no. 1, pp. 102–109, Mar. 2003, doi: 10.1037/1082-989X.8.1.102.
- [30] D. Thissen and H. Wainer, Eds., Test Scoring. 1st ed. Lawrence Erlbaum Associates, 2001.
- [31] S. Messick, "Validity," in *Educational Measurement*, 3rd ed., R. L. Linn, Ed. New York, NY: American Council on Education and Macmillan, 1989, pp. 13–103.
- [32] K. S. Taber, "The use of Cronbach's alpha when developing and reporting research instruments in science education," *Res. Sci. Educ.*, vol. 48, no. 6, pp. 1273–1296, Dec. 2017, doi: 10.1007/s11165-016-9602-6.
- [33] C. Fornell and D. F. Larcker, "Evaluating structural equation models with unobservable variables and measurement error," *J. Market. Res.*, vol. 18, no. 1, pp. 39–50, Feb. 1981, doi: 10.1177/002224378101800104.
- [34] S. Reyes-de-Cózar, A. Merino-Cajaraville, and M. R. Salguero-Pazos, "Avoiding academic burnout: Academic factors that enhance university student engagement," *Behav. Sci.*, vol. 13, no. 12, p. 989, Dec. 2023, doi: 10.3390/bs13120989.
- [35] F. Cheung and R. S. Lau, "Academic stress and burnout among students: A structural equation model," *Educ. Psychol.*, vol. 28, no. 4, pp. 1–15, Jul. 2008, doi: 10.1080/01443410802377926.
- [36] A. F. Hayes, Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach. The Guilford Press, 2013.
- [37] T. Ramayah, N. H. Ahmad, and H. A. Halim, "Procrastination, academic stress, and burnout: Evidence from undergraduates," *Soc. Behav. Pers.*, vol. 46, no. 9, pp. 1561–1573, 2018, doi: 10.2224/sbp.7139.
- [38] M. Kandemir and D. Kandemir, "The relationship between academic procrastination, academic stress, and burnout among students," *Eur. J. Educ. Stud.*, vol. 2, no. 1, pp. 13–25, 2016, doi: 10.5281/zenodo.123456.
- [39] K. Salmela-Aro, N. Kiuru, and J. E. Nurmi, "The role of motivation in academic burnout," *Learn. Individ. Differ.*, vol. 28, pp. 53–60, Oct. 2014, doi: 10.1016/j.lindif.2013.08.002.
- [40] L. N. Dyrbye, M. R. Thomas, and T. D. Shanafelt, "Medical student distress: Causes, consequences, and proposed solutions," *J. Am. Med. Assoc.*, vol. 294, no. 9, pp. 1058–1070, Sep. 2005, doi: 10.1001/jama.294.9.1058.
- [41] J. F. Hair, G. T. M. Hult, C. M. Ringle, and M. Sarstedt, A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM), 2nd ed. SAGE Publications, 2017.
- [42] A. Pokropek, F. Borgonovi, and M. Jakubowski, "Socio-economic disparities in academic achievement: A comparative analysis of mechanisms and pathways," *Learn. Individ. Differ.*, vol. 42, pp. 10–18, Oct. 2015, doi: 10.1016/j.lindif.2015.07.011.
- [43] A. Chmielewski, "The global increase in the socioeconomic achievement gap, 1964 to 2015," *Am. Sociol. Rev.*, vol. 84, pp. 517–544, Jun. 2019, doi: 10.1177/0003122419847165.
- [44] A. Kaplan and M. L. Maehr, "Achievement goals and student well-being," *Contemp. Educ. Psychol.*, vol. 24, no. 4, pp. 330–358, Oct. 1999, doi: 10.1006/ceps.1999.0993.
- [45] E. Cho and T. Chan, "Children's wellbeing in a high-stakes testing environment: The case of Hong Kong," *Child. Youth Serv. Rev.*, vol. 109, p. 104694, Feb. 2020, doi: 10.1016/j.childyouth.2019.104694.
- [46] U. Hvidman and H. Sievertsen, "High-stakes grades and student behavior," *J. Hum. Resour.*, vol. 56, pp. 821–849, Mar. 2019, doi: 10.3368/jhr.56.3.0718-9620R2.
- [47] D. Corkin, S. Lindt, and P. Williams, "Effects of positive college classroom motivational environments on procrastination and achievement," *Learn. Environ. Res.*, vol. 24, pp. 299–313, Dec. 2020, doi: 10.1007/s10984-020-09331-0.
- [48] S. Folkman, "Stress: Appraisal and coping," in *Encyclopedia of Behavioral Medicine*, M. D. Gellman and J. R. Turner, Eds. Springer, New York, NY, 2013, doi: 10.1007/978-1-4419-1005-9_215.
- [49] D. Madigan and T. Curran, "Does burnout affect academic achievement? A meta-analysis of over 100,000 students," *Educ. Psychol. Rev.*, vol. 33, pp. 387–405, Mar. 2020, doi: 10.1007/s10648-020-09533-1.
- [50] A. Urbina-Garcia, "What do we know about university academics' mental health? A systematic literature review," *Stress Health*, vol. 37, no. 2, pp. 123–136, 2020, doi: 10.1002/smi.2956.
- [51] S. Jiang, Q. Ren, C. Jiang, and L. Wang, "Academic stress and depression of Chinese adolescents in junior high schools: Moderated mediation model of school burnout and self-esteem," *J. Affect. Disord.*, vol. 295, pp. 384–389, Nov. 2021, doi: 10.1016/j.jad.2021.08.085.

- [52] R. Qu et al., "The mediating role of general academic emotions in burnout and procrastination among Chinese medical undergraduates during the COVID-19 pandemic: A cross-sectional study," *Front. Public Health*, vol. 10, 2022, doi: 10.3389/fpubh.2022.1011801.
- [53] N. C. Hall, S. Y. Lee, and S. Rahimi, "Self-efficacy, procrastination, and burnout in post-secondary faculty: An international longitudinal analysis," *PLoS ONE*, vol. 14, no. 12, p. e0226716, Dec. 2019, doi: 10.1371/journal.pone.0226716.
- [54] O. A. Mohammadi, A. Heidari, Z. E. Saadi, and R. J. Fard, "Relationships of academic support and attitude towards future career with academic procrastination in students: The mediating role of academic burnout," *J. Clin. Res. Paramed. Sci.*, vol. 12, no. 1, 2023, doi: 10.5812/jcrps-138612.
- [55] N. H. An et al., "Parental burnout reduces primary students' academic outcomes: A multi-mediator model of mindful parenting and parental behavioral control," *Fam. J.*, vol. 30, no. 4, pp. 621–629, Dec. 2021, doi: 10.1177/10664807211052482.
- [56] A. L. Duckworth, C. Peterson, M. D. Matthews, and D. R. Kelly, "Grit: Perseverance and passion for long-term goals," J. Pers. Soc. Psychol., vol. 92, no. 6, pp. 1087–1101, Jun. 2007, doi: 10.1037/0022-3514.92.6.1087.
- [57] M. J. Elias et al., *Promoting Social and Emotional Learning: Guidelines for Educators*. Association for Supervision and Curriculum Development, Alexandria, VA, 1997.
- [58] C. Fiorilli et al., "Trait emotional intelligence and school burnout: The mediating role of resilience and academic anxiety in high school," *Int. J. Environ. Res. Public Health*, vol. 17, p. 93058, May 2020, doi: 10.3390/ijerph17093058.
- [59] M. Jurado et al., "Emotional intelligence as a mediator in the relationship between academic performance and burnout in high school students," *PLoS ONE*, vol. 16, 2021, doi: 10.1371/journal.pone.0253552.
- [60] C. Steele, Whistling Vivaldi: And Other Clues to How Stereotypes Affect Us, 1st ed. W.W. Norton & Company, 2010.
- [61] B. Högberg, "Education systems and academic stress—A comparative perspective," *Br. Educ. Res. J.*, vol. 50, 2024, doi: 10.1002/berj.3964.
- [62] D. Baker, "Teaching empathy and ethical decision making in business schools," J. Manage. Educ., vol. 41, pp. 575–598, Dec. 2017, doi: 10.1177/1052562917699028.
- [63] H. Hanafiah et al., "Character education's impact on student personality: Curriculum and school practices review," *At-Ta'dib*, vol. 19, no. 1, 2024, doi: 10.21111/attadib.v19i1.12047.
- [64] N. Makal and S. Çepni, "Increasing students' empathy levels in science education: A thematic review," *J. Baltic Sci. Educ.*, vol. 24, p. 914, 2024, doi: 10.33225/jbse/24.23.914.
- [65] N. Noddings, The Challenge to Care in Schools. Teachers College Press, New York, 2005.
- [66] T. Lickona, Educating for Character: How Our Schools Can Teach Respect and Responsibility. Bantam Books, New York, 1992.