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Impact of Stressors on Academic Performance: A Case Study of Business Students in Karachi

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The study examines how perceived stress affects academic performance at Karachi's business schools. It tries to discover how stressors affect students' capacity to achieve academic success by looking at the particular setting of business education. This study has the potential to provide insight into tactics that can improve students' success and well-being in the challenging academic setting of Karachi's business schools. The study aims to examine the role of students' perceived stress on academic performance in the business schools of Karachi, Pakistan. The quantitative

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approach has been adopted for data collection**,** and 384 sample responses have been gathered from university students. The PLS-SEM analysis technique has been used for data analysis. The results have identified that academic load positively and significantly affects perceived stress. Financial constraints have a positive and significant effect on perceived stress. Perceived stress has a negative and significant effect on academic performance. Social support has a negative and significant effect on perceived stress. Time management has a negative but insignificant effect on perceived stress. Additionally, in this study, the factors which cause stress to students in university life are discussed. Keeping in focus this study, the practitioners should try to adopt practices which can reduce the stress level for students so that they can perform better academically and get better results. Financial constraint is considered one of the biggest reasons contributing to students' stress.

Keywords: Financial constraints; social support; academic load; perceived stress; academic performance.

1. INTRODUCTION

The 21st century demands a dynamic and adaptable workforce, capable of navigating a rapidly evolving global landscape. To prepare students for these challenges, higher education institutions must cultivate well-rounded individuals equipped with critical thinking, problem-solving, and interpersonal skills (Ayala & Manzano, 2018). However, the university experience can be incredibly demanding, placing significant pressure on students and potentially hindering their academic success.

One of the most significant stressors for university students is the academic workload. The transition from high school to university often involves a substantial increase in academic rigor, with higher expectations for independent learning, critical analysis, and project-based assignments. This heightened workload, coupled with the pressure to maintain high grades and succeed academically, can lead to feelings of anxiety, overwhelm, and burnout (Enns, et al., 2018).

Furthermore, the shift from a primarily exam-based assessment system in high school to a more project-oriented approach in university can be particularly challenging for some students (El, et al., 2018). Project-based learning often requires significant time management, research, and collaboration skills, which may not have been adequately developed in previous educational settings. This can lead to feelings of inadequacy and frustration, further exacerbating academic stress.

Financial constraints also pose a significant challenge for many university students. The rising cost of tuition, fees, and living expenses can create significant financial burdens, forcing students to juggle academic pursuits with part-time jobs, which can impact their academic performance and overall well-being. Moreover, financial insecurity can lead to increased stress and anxiety, hindering cognitive function and academic focus (Mani et al., 2020).

Socioeconomic disparities can further exacerbate these challenges. Students from low-income backgrounds may face limited access to resources, such as academic support services, tutoring, and technology. These disparities can also limit their ability to engage with faculty members, which is crucial for academic success (Lee & Maynard, 2019).

Effective time management is another critical factor in mitigating academic stress. Balancing academic responsibilities with personal commitments, such as social activities, part-time jobs, and family obligations, can be a significant challenge for many students. Poor time management skills can lead to procrastination, missed deadlines, and increased feelings of anxiety and overwhelm (Sainz et al., 2019).

Social support plays a crucial role in buffering the effects of stress. However, the university environment can be isolating for some students, leading to feelings of loneliness and a lack of social support (Almeida, et al., 2018). This is particularly true for students who have relocated away from their families and support networks, leaving them to navigate the challenges of university life independently (Alsubaie, et al., 2019, Kim et al., 2018).

To address these challenges, universities must create a supportive and inclusive learning

environment. This includes providing adequate academic support services, such as tutoring, academic advising, and mental health resources. Financial aid programs and scholarships can help alleviate the financial burden on students, enabling them to focus on their studies. Furthermore, fostering a strong sense of community and promoting social interaction among students can help combat feelings of isolation and loneliness.

In conclusion, the university experience presents a unique set of challenges for students, including academic pressure, financial constraints, time management issues, and social isolation. By understanding the multifaceted nature of these stressors and implementing effective interventions, universities can create a more supportive and conducive learning environment, enabling students to thrive academically and personally.

2. MATERIALS AND METHODS

Data Collection: The study has used survey method for data collection based on the rationalization that large scale data collection and in-person method to collect specific responses can be handled by the survey method (Slattery, et al., 2011). The survey method was used to gather data from a diversified population during the COVID-19 pandemic by incorporating different in-person and online surveys (Rubin & Babbie, 2007). Further, the study has enabled the data collection process using a five-point Likert scale structured questionnaire to gauge the respondents' opinions, attitudes, and experiences about the undertaken research subject (Groves, et al., 2011). The study has used a five-point Likert questionnaire with certain rationales that ensure considerable response rate (Curtis & Redmond, 2009) and creates less irritation to the respondents while recording their responses (de Winter & Dodou, 2010).

Statistical Analysis: Hence, the study has used quantitative research approach to examine the factors affecting students' perceived stress that impact their academic performance in Pakistan. Therefore, the study has an explanatory type of investigation to comprehend the relationship between student stress and academic performance in Pakistan.

The study has used PLS-SEM to ensure the predictive-oriented approach towards endogenous constructs due to the exploratory modeling framework (Hair, et al., 2011a). Further, the study has collected 200 responses and therein, it has been recommended that PLSSEM is capable of handling small sample size ($n < 250$) and ignores the data distribution assumptions (Hair, et al., 2013). Furthermore, PLS-SEM has been widely used in mediating moderating analyses and research (Henseler & Fassott, 2010). Therein, PLS-SEM has been used in the study to understand the mediating role of students' perceived stress between its antecedents and academic performance. Lastly, the study has used PLS-SEM to assess the reliability and validity of the modeling framework based on algorithm and blindfolding techniques (Hair, et al., 2016).

Sampling Design: Despite having numerous methods to estimate the sample size in quantitative studies, Sekaran and Bougie (2016) suggested that 384 responses should be enough for quantitative survey studies; henceforth,

Research Instrument: The following Table 1 shows the instrumentation of the data collection tool.

The Table 1 showed the variables along with their total number of measures/items in the instrument. The scale type was provided by the research from where the instrument was adapted (source).

Table 1. Data collection instrument

Variables	Items	Scale Type	Sources
Financial Constraints	8	7-Point Likert	(Liu, et al., 2012)
Social Support	8	5-Point Likert	(Malecki & Elliott, 1999)
Time Management	7	4-Point Likert	(Grissom, et al., 2015)
Academic Load	5	5-Point Likert	(Jones & Johnston, 1999)
Students' Perceived Stress	5	4-Point Likert	(Cohen, et al., 1983)
Academic Performance	5	5-Point Likert	(DuPaul, et al., 1991)

3. RESULTS

The study has collected 384 responses from the sample population. Another important aspect in the sampling design is selecting appropriate sampling technique and herein, two major categories have been discussed including probability sampling that refers to the randomized selection of the sample units from population with some systematic approach in case of known population size (Kamakura, 2011). The other category of sampling technique is the nonprobability sampling method referring to the nonrandomized but rationalized selection of sample units from the population based on predetermined criteria in case of unknown population size (Vehovar, et al., 2016). Therefore, the study has not known the actual population size i.e., total number of university students in Karachi and thus, the study has used nonprobability sampling technique. Further, the nonprobability sampling techniques have four subcategories: cluster sampling, convenience sampling, purposive sampling, and snowball sampling (Uprichard, 2013). The study has used convenience sampling to collect responses from the university students in the Karachi city based on their readily availability and accessibility for the researcher (Sarstedt, et al., 2018).

Respondents' Profile: The following Table 2 has showed the demographic profile of the respondents.

The Table 2 has included 384 respondents in which 96 (25%) were male, and 287 (74.7%) were female. There were 72 (18.8%) respondents were from 18 to 21 years, 300 (78.1%) respondents were from 22 to 26 years, and 12 (3.1%) respondents were from 27 to 30 years. There were 12 (3.1%) respondents from less than 2.5 GPA, 60 (15.6%) respondents from 2.5 – 3 GPA, 168 (43.8%) respondents from 3 – 3.5 GPA, and 144 (37.5%) respondents from 3.5 – 4 GPA. There were 36 (9.4%) respondents from 3 courses per semester, 48 (12.5%) respondents from 4 course per semester, 72 (18.8%) respondents from 5 courses per semester, and 228 (59.4%) respondents from 6 course per semester.

Measurement Model: The following Table 3 shows the measurement model results that includes outer loadings, construct reliability (CR), and average variance extracted (AVE).

Table 2. Demographic Profile (n=384)

		Frequency	Percent
Gender	Male	96	25
	Female	287	74.7
	18 to 21 years	72	18.8
Age Group	22 to 26 years	300	78.1
	27 to 30 years	12	3.1
	Less than 2.5	12	3.1
	2.5 – 3	60	15.6
GPA	3 - 3.5	168	43.8
	3.5 – 4	144	37.5
	3 per semester	36	9.4
	4 per semester	48	12.5
Course Load	5 per semester	72	18.8
	6 per semester	228	59.4

Table 3. Outer Loadings

Variable	Items	Loading	Alpha	CR	AVE
	AL1	0.680 0.780			
	AL2	0.793			
Academic Load					
	AL4AL5	0.730		0.823	0.539
		0.676			
	AP1	0.808 0.871			
	AP2	0.825			
Academic Performance					
	AP4	0.859		0.903	0.701
	AP5	0.844			

Variable	Items	Loading	Alpha	CR	AVE
	FC1	0.935 0.636			
	FC4	0.743			
Financial Constraints	FC6	0.780		0.852	0.595
	FC8	0.742			
	PSAS1	0.844 0.884			
	PSAS2	0.902			
Perceived Stress	PSAS3	0.869		0.906	0.661
	PSAS4	0.762			
	PSAS5	0.645			
	SS4	0.507 0.890			
	SS5	0.691			
Social Support	SS6	0.823		0.879	0.601
	SS7	0.846			
	SS8	0.872			
	TM1	0.842 0.915			
	TM2	0.781			
	TM3	0.921			
Time Management	TM4	0.945		0.942	0.701
	TM5	0.817			
	TM6	0.813			
	TM7	0.757			

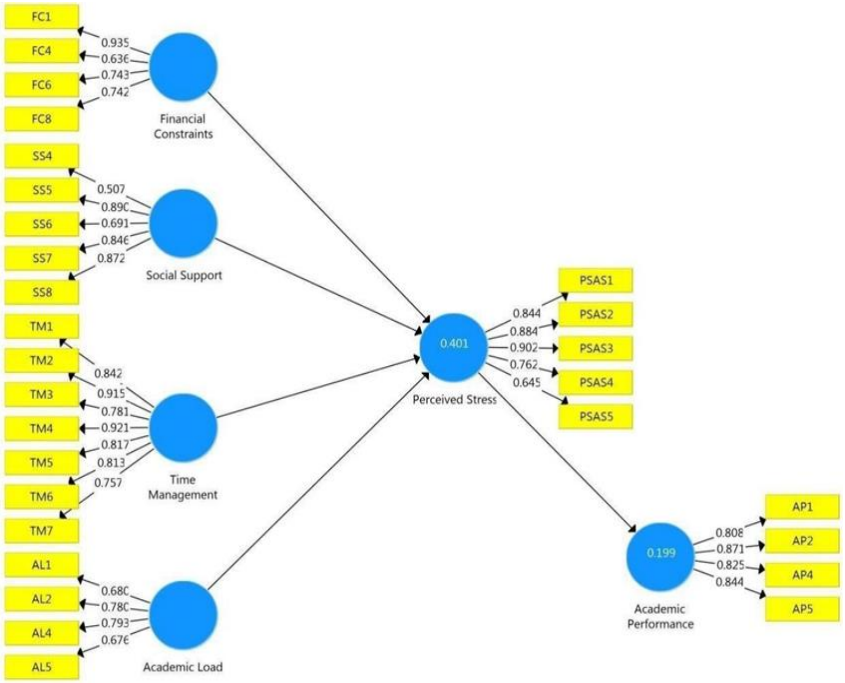

Fig.1. PLS Algorithm

Table 4. Fornell-Larcker Criterion

	AL	AP	FC	PSAS	SS	TM
Academic Load	**0.734**					
Academic Performance	0.002	**0.837**				
Financial Constraints	0.311	0.012	**0.771**			
Perceived Stress	0.382	-0.446	0.412	**0.813**		
Social Support	-0.030	-0.017	-0.343	-0.480	**0.775**	
Time Management	0.006	0.006	-0.382	-0.195	0.081	**0.837**

According to Hair et al. (2011b) outer loadings should be higher than 0.70 for absolute acceptance. However, Hair et al. (2016) recommended that when the values are less than the above threshold and higher than 0.60, they can also be accepted based on convergent validity. Additionally, recommended thresholds for CR and AVE are that their values should be higher than 0.70 and 0.50 respectively (Hair et al., 2011b). Hence, the Table 3 has showed all correct values and therefore, measurement model had been achieved.

Discriminant Validity: The following Table 3 has showed the results of Fornell and Larcker criterion in discriminant validity.

The table contains a recommendation that all the diagonal and bold values must be higher in their constructs than other values. The Table 4 has showed all such values and therefore, discriminant validity had been achieved using Fornell and Larcker (1981) criterion.

The following Table 5 has showed the results of cross loadings in discriminant validity.

The Table 5 has been based on the recommendation that all the bold values must be higher in their constructs than other values (Hair, et al., 2014). Therefore, the Table 5 has showed all such values and therefore, discriminant validity had been achieved using cross loadings.

The following Table 6 has showed the results of HTMT ratio in discriminant validity.

The Table 6 has followed the recommendation given by Henseler et al. (2015) that all the values should be less than 0.85 for being accepted. The Table 6 has showed all such values and therefore, discriminant validity had been achieved using HTMT ratio.

Table 5. Cross Loadings

	AL	AP	FC	PSAS	SS	TM
AL1	**0.680**	0.024	0.170	0.148	0.124	-0.064
AL2	**0.780**	-0.064	0.188	0.339	0.046	0.288
AL4	**0.793**	0.102	0.436	0.355	-0.130	-0.334
AL5	**0.676**	-0.099	-0.048	0.166	-0.061	0.211
AP1	0.114	**0.808**	0.167	-0.333	-0.193	-0.048
AP2	-0.155	**0.871**	-0.194	-0.467	0.031	-0.012
AP4	0.101	**0.825**	-0.009	-0.287	0.145	0.091
AP5	0.023	**0.844**	0.144	-0.366	-0.035	0.007
FC1	0.360	0.051	**0.935**	0.486	-0.420	-0.288
FC4	0.194	0.012	**0.636**	0.216	-0.073	-0.414
FC6	0.165	0.067	**0.743**	0.242	-0.294	-0.194
FC8	0.120	-0.214	**0.742**	0.154	-0.079	-0.403
PSAS1	0.343	-0.312	0.500	**0.844**	-0.446	-0.167
PSAS2	0.473	-0.369	0.256	**0.884**	-0.442	-0.077
PSAS3	0.476	-0.369	0.411	**0.902**	-0.321	-0.187
PSAS4	0.198	-0.407	0.254	**0.762**	-0.404	-0.210
PSAS5	-0.078	-0.385	0.230	**0.645**	-0.341	-0.174
SS4	0.131	0.189	-0.064	-0.252	**0.507**	0.080
SS5	0.023	-0.085	-0.156	-0.416	**0.890**	-0.015
SS6	-0.138	-0.059	-0.486	-0.309	**0.691**	0.210
SS7	-0.077	-0.016	-0.279	-0.489	**0.846**	0.034
SS8	-0.012	-0.031	-0.354	-0.323	**0.872**	0.058
TM1	-0.070	-0.069	-0.382	-0.126	0.044	**0.842**
TM2	0.012	0.043	-0.353	-0.179	0.110	**0.915**
TM3	0.163	-0.052	-0.159	0.050	0.010	**0.781**
TM4	0.031	-0.058	-0.372	-0.134	0.096	**0.921**
TM5	0.113	0.016	-0.174	-0.107	-0.061	**0.817**
TM6	0.043	-0.129	-0.347	0.013	-0.098	**0.813**
TM7	-0.077	-0.220	-0.396	0.023	-0.052	**0.757**

Table 6. Heterotrait-Monotrait Ratio (HTMT)

	AL	AP	FC	PSAS	SS	TM
Academic Load	0.177					
Academic Performance						
Financial Constraints	0.434	0.255				
Perceived Stress	0.476	0.515	0.433			
Social Support	0.256	0.212	0.429	0.558		
Time Management	0.427	0.141	0.478	0.155	0.211	

Predictive Relevance: The following Table 7 has showed the results of predictive relevance.

Table 7. Predictive Relevance

	R Square	R Square Adjusted	Q Square
Academic Performance	0.199	0.197	0.132
Perceived Stress	0.401	0.395	0.260

The Table 7 has showed that academic performance has been predicted upto 19.9 percent, and perceived stress upto 40.1 percent. The Q square has been found higher than absolute zero.

Hypothesis-Testing using PLS-SEM: The following Table 8 provides hypothesis-testing using PLS bootstrapping technique at 5000 subsamples and 5 percent statistical significance. The study has used path modeling technique for hypothesis-testing to assess the relationship between latent constructs in the structural (inner) model.

Table 8. Path Analysis

	Estimate	Std. Dev.	T-Stats	Prob.
Academic Load -> Perceived Stress	0.334	0.044	7.549	0.000
Financial Constraints -> Perceived Stress	0.120	0.051	2.362	0.009
Perceived Stress -> Academic Performance	-0.446	0.042	10.742	0.000
Social Support -> Perceived Stress	-0.420	0.043	9.680	0.000
Time Management -> Perceived Stress	-0.117	0.107	1.092	0.137

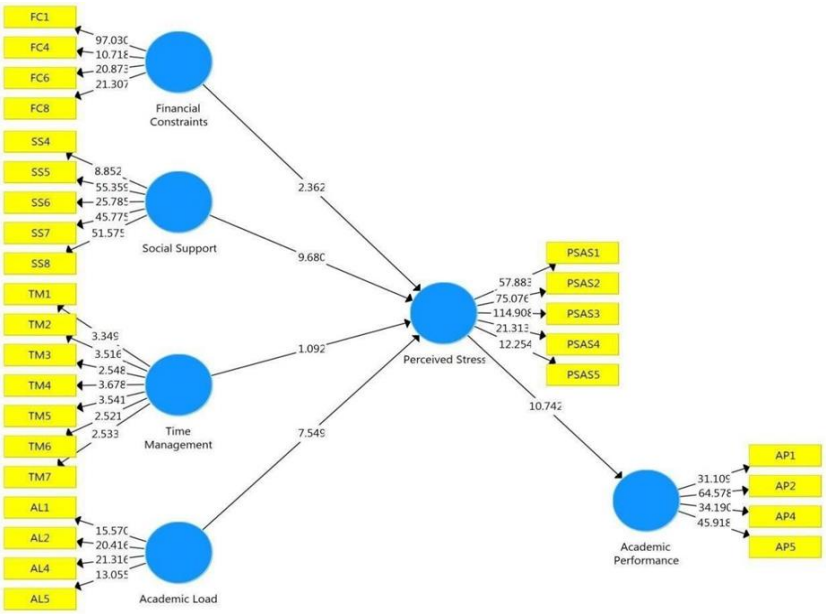

Fig. 2. PLS Bootstrapping

The Table 8 has showed that academic load (ß = 0.334, p < 0.001) has a positive and significant effect on perceived stress. The financial constraints (ß = 0.120, p < 0.05) has a positive and significant effect on perceived stress. The perceived stress (ß = -0.466, p < 0.001) has a negative and significant effect on academic performance. The social support (ß = -0.420, p < 0.001) has a negative and significant effect on perceived stress. The time management (ß = -0.117, p > 0.10) has a negative but insignificant effect on perceived stress.

4. DISCUSSION

Soomro et al. (2019) examined stress management and academic performance among students at Mohtarma Benazir Bhutto Shaheed Sindh University. Using SPSS-21 for data analysis, their quantitative study revealed stress factors categorized into environmental, academic, and personal aspects. Results indicated stress negatively impacted students' academic and social activities. Similarly, Savarese et al. (2019) implemented the “Elicitation Interview” technique at the University of Salerno to address relationship issues, low self-efficacy, and mental distress. The counseling approach encouraged reflection and resilience, resulting in improved well-being and reduced distress-related reactions.

Tus (2020) analyzed the relationship between stress, motivation, and academic performance among senior high school students in Bulacan, Philippines, using the Perceived Stress Scale and Academic Motivation Scale. Findings revealed average stress and above-average motivation, with academic performance ranging from adequate to satisfactory. However, stress and motivation showed minimal influence on academic achievement. In contrast, Iorga et al. (2018) assessed stress and depression among Romanian medical students, discovering higher stress among graduating students and elevated depression among freshmen. Statistical analysis revealed mild to moderate depression and an average perceived stress score (M = 17.31±6.79).

Ahmad and Rana (2021) explored perceived stress, self-esteem, and academic performance among postgraduate students in Pakistan. Their findings showed a low negative correlation between stress and academic performance, while self-esteem exhibited a moderate positive correlation with academic achievement. Moreover, stress and self-esteem were inversely related. Finanda (2019) studied stress as a moderator between work-life balance and academic performance among Andalas University students. While work-life balance positively impacted academic achievement, stress influenced performance significantly but did not moderate the work-life balance effect.

Lastly, Ranasinghe et al. (2017) investigated emotional intelligence (EI), stress, and academic achievement among medical undergraduates. Females displayed higher EI, and extracurricular participation correlated positively with EI (r = 0.121, p = 0.008). Students satisfied with their medical career choice exhibited higher EI scores and lower stress levels, emphasizing the role of emotional well-being in academic success.

Stress and Academic Performance Among Students: A Review: Academic stress is a significant concern for students across various educational levels. Numerous studies have investigated the factors contributing to stress and its impact on academic performance. This review summarizes key findings from several studies examining the relationship between stress, its sources, and academic outcomes in different student populations.

College Student-Athletes: Raalte and Posteher (2019) examined the role of social support in mitigating stress and enhancing self-efficacy among 459 Division I collegiate student-athletes. Their findings revealed that stress negatively predicted self-efficacy, while social support did not moderate this relationship. However, self-efficacy positively predicted performance, and partially mediated the relationship between stress and performance. The researchers emphasized the importance of providing holistic support to student-athletes through institutional resources.

Secondary School Students: Kalaivani et al. (2018) investigated stress factors among 60 secondary school students in Tamil Nadu, India. Their findings indicated that interpersonal conflicts (fighting with family and friends, family troubles) and personal issues (workplace stress, sleep disturbances, financial problems) were the most significant sources of stress. Academically, increased workload and lack of breaks were identified as major stressors.

Medical Students: Stegers Jager et al. (2020) investigated the impact of a stricter Year 1 standard on academic achievement and stress levels in a Dutch medical school. While the

stricter standard improved pass rates, it disproportionately affected male students and those with lower perceived stress and health competence.

Maqbool et al. (2020) examined the relationship between physical activity, stress, and academic performance in medical students. While females demonstrated higher academic achievement and males exhibited higher physical activity levels, no significant association was found between physical activity, stress, and academic performance.

Saqib and Rehman (2018) investigated the impact of stress on academic performance in secondary school students in District Vehari, Pakistan. Their findings revealed a significant negative impact of stress, with teachers and parents identified as major sources of stress.

Dental Students: Dilbone et al. (2018) evaluated the effectiveness of preparation workshops in reducing stress and improving academic performance among dental students. The study found that students who attended workshops exhibited higher exam scores and reported lower stress levels.

Pharmacy Students: S. Kristina et al. (2020) assessed stress levels among Indonesian pharmacy students, identifying the national pharmacy examination as the most significant source of stress.

Spivey et al. (2020) examined perceived stress and its impact on academic achievement in pharmacy students. Results indicated that undergraduate science GPA, initial perceived stress, and age were significant predictors of first-year GPA.

Emotional Intelligence and Stress: Gupta et al. (2017) investigated the relationship between emotional intelligence, perceived stress, and academic achievement in first-year medical students. While emotional intelligence did not directly predict academic success, it was a significant predictor of subjective stress.

Clinical Years: Dendle et al. (2018) examined the impact of job- and study-related stress on psychological discomfort and academic achievement in first-year medical students. The study found a significant increase in psychological distress over the year, but no association between psychological distress and academic achievement.

Opoku-Acheampong et al. (2017) investigated the relationship between stress and quality of life among undergraduate pharmacy students. The study found higher stress levels in first- and second-year students compared to later years.

Female Medical Students: Tariq et al. (2020) investigated perceived stress and stress factors among female medical students in Pakistan. "Raised parental expectations," "frequent examinations," and "sleeping troubles" were identified as major stressors.

Community Violence and Sexual Risk: Hong et al. (2019) investigated the impact of community violence on sexual risk-taking behavior among African American adolescents. The study found that community violence exposure increased post-traumatic stress, which in turn negatively impacted future orientation and increased sexual risk-taking behaviors.

Nursing Students: Simonelli-Muñoz et al. (2018) evaluated a modified version of the Student Stress Inventory-Stress Manifestations (SSI-SM) for university nursing students. The study found that personal issues, particularly family conflicts, were significantly associated with higher stress levels.

Stress and Academic Performance Among Students: A Review

Several studies have investigated the impact of stress on academic performance across various student populations.

Social Media and Stress: Turel et al. (2018) found that short-term abstinence from social media (SNS) significantly reduced perceived stress levels in both moderate and heavy SNS users. This finding supports the notion that excessive SNS usage can contribute to increased stress.

Coping Mechanisms and Academic Stress: Crego et al. (2016) examined the role of coping mechanisms in academic stress among dentistry students. Results showed that emotional coping techniques (venting, negative self-focus) were associated with increased stress, while rational coping techniques (problem-solving, positive

reappraisal, seeking social support) were negatively correlated with perceived stress.

Stress Vulnerability and Academic Performance: Narciso (2020) investigated the relationship between stress vulnerability and academic performance in management students. While stress vulnerability was moderate, no significant association was found between stress vulnerability and academic performance.

Stress, Learning Techniques, and Self-Efficacy: Mohsen (2017) examined stress levels, preferred learning techniques, and the relationship between self-esteem, academic self-efficacy, perceived stress, and academic performance in Saudi Arabian psychology undergraduates. The study found high stress levels among students, with a preference for multimodal learning techniques.

Stress and Learning Approaches in Medical Students: Mirghni and Elnour (2017) evaluated the teaching and learning environment of clinical-phase medical students in Sudan. The study found that 88.1% of medical students reported experiencing stress.

Stressors and Coping Abilities in Graduate Students: Anekstein et al. (2019) developed and validated questionnaires to measure common stressors and coping abilities among graduate counseling students in the United States.

Stress, Type A Personality, and Academic Success: Sakitri (2020) investigated the relationship between stress, Type A personality, and academic success in an Indonesian business school. The study found that stress negatively impacted academic performance, while Type A personality was positively associated with academic achievement.

Student Perceptions of Stress and Academic Performance: Frazier et al. (2019) examined undergraduate students' perceptions of how stress impacts their academic performance. Students who believed stress negatively impacted their grades had lower GPAs, higher stress levels, and lower coping self-efficacy, resilience, and social support. Males, heterosexuals, and students from ethnic minorities were less likely to report feeling stressed but did not necessarily have higher GPAs.

Factors Contributing to Stress and Academic Performance:

- **Financial Constraints:** Savarese et al. (2019) found a significant positive relationship between financial constraints and perceived stress.
- **Social Support:** Crego et al. (2016) found that social support plays a crucial role in mitigating stress.
- **Time Management:** Opoku-Acheampong et al. (2017) highlighted the importance of effective time management in reducing stress levels.
- **Academic Load:** Desai (2019) identified academic workload as a major contributor to increased stress levels in students.

Limitations of Research:

- **Geographic and Sample Size Limitations:** Many studies have limited geographic scope and small sample sizes, potentially limiting the generalizability of findings.
- **Methodological Limitations:** The reliance on self-reported data in many studies may introduce biases.
- **Limited Consideration of Factors:** Some studies may not comprehensively consider all relevant factors contributing to stress, such as fear of failure and cultural influences.

5. CONCLUSIONS

Implications: This study examines how stress variables affect students' university experiences. Practitioners may use techniques like developing payment pricing structures, scholarships, and reduced task loads in order to lessen stress. Stress reduction strategies should take into account efficient time management techniques, attendance regulations, and forgiving assignment deadlines. Students' academic performance and general well-being can be improved through stress management classes, thorough course descriptions, and assistance.

Conclusion: The study investigates the factors that affect the academic performance of university students in Karachi, Pakistan. A quantitative approach was employed to collect 384 responses, and PLS-SEM was utilized to examine them. Academic load and financial constraints had positive and significant effects on

how stressed-out people felt, demonstrating that more coursework and financial challenges make people feel more worried. Notably, perceived stress had a detrimental and significant impact on academic performance, connecting poorer academic performance with higher stress levels. Since social support had a negative and large impact on perceived stress, having stronger support networks from friends, family, and the university can reduce stress. Finally, despite having a negative effect on felt stress, time management did not significantly differ from a control group.

Future Research Directions: The present study, which focused on Karachi's business schools, offers future research directions. Higher sample sizes for accuracy, the inclusion of different educational sectors including Pakistani schools and colleges, and the expansion of the study to additional regions or countries could produce enlightening results. Additional variables like academic difficulty and failure dread should be included to the research model to make it more accurate. Longitudinal research and qualitative methods like in-depth interviews that might give a clearer understanding of the stress management strategies employed by students at different schools could lead to improved stress management strategies in education.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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