
Impact of Mental Health on Academic Performance Among University Students

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Abstract

The study seeks to find the relationship between mental health issues and university students' academic performance in Pakistan in this cross-sectional study. Standardized tools for detecting depression, anxiety and stress were used to measure the mental condition of university students of Faisalabad, Pakistan. A simple random sampling method was used to select 200 students from University of Agriculture Faisalabad (UAF), Government College University Faisalabad (GCUF), National Textile University (NTU) and University of Faisalabad (UOF). The DASS-21 was used to collect data and self-reported cumulative Grade Point Average (GPA) was used to measure academic performance. The results of this study show that most students experience moderate-to-severe levels of distress and that distress is negatively related to academic performance. Depression is the best indicator of distress compared to other mental health-related measures. The study provides region-based evidence on the mental health of students, a scarcely addressed issue in Pakistan's higher education system, along with policy recommendations for university administrators.

Keywords: Mental Health, Academic Performance, University Students, Pakistan, Faisalabad, Depression, Anxiety, Stress, DASS-21, GPA, Quantitative Research, Simple Random Sampling

Introduction

Students' mental health at university is one of the more important issues in higher education today. For example, among enrolled students the prevalence of symptoms for depressive disorders, anxiety disorders and chronic stress is negatively associated with academic outcomes (Ibrahim et al., 2013; Richardson et al., 2012) throughout most countries. Despite substantial increases in higher education enrollment in Pakistan, from 932,159 in 2013 to over 1.7 million in 2022 (HEC, 2022), support for university students' mental health and well-being is lacking. Mental health support is really lacking in institutions. People are also very ashamed to talk about their problems. We do not have research on this topic from places like Faisalabad in Pakistan.

Faisalabad is a city in Pakistan and it has many universities, both public and private where a lot of student's study. Surprisingly nobody has done a proper study on how mental health affects the academic performance of university students in this city. This study is trying to fill that gap by providing information that can help the universities in Faisalabad and other similar cities in Pakistan make better policies.

This study is based on numbers and surveys. We used a method to choose the people for the study so that it is fair and accurate. The results of this study will be useful for people who work in universities like administrators and counselors well as for people who make policies for education in Pakistan. Mental health is an issue and this study is trying to understand the relationship between mental health and academic performance of university students, in Faisalabad, Pakistan.

Mental Health and Academic Performance: Global Evidence

A lot of research from around the world shows that mental health issues can affect how well students do in school. A study by (Auerbach et al., 2018) which was sponsored by the World Health Organization and looked at 19 countries found that 35% of first-year students had at least one mental health disorder. These mental health disorders like anxiety and depression can really impact student's grades. For example, a review of 380 studies by Richardson and others in 2012 found that anxiety was linked to grades with a correlation of -0.21. Depression was also linked to GPAs, poor attendance and a higher risk of dropping out. When students have health issues it can be harder for them to sleep, focus and stay motivated which can all affect their performance in school. Hershner and Chervin in 2014 identified these as ways that mental health can impact academic performance. These findings highlight the importance of addressing health issues in students to help them succeed in school.

Student Mental Health in Pakistan

Within Pakistan a study by (Naqvi et al., 2020) found that 42.3% of public university students in Lahore had depression scores above the threshold on the DASS-21 test. Another study by (Rana et al., 2021) showed that financial insecurity, pressure from parents to do well in studies and neglect by universities were stressors for Pakistani students. A study by (Khan et al., 2019) discovered that among students in Karachi there was a strong link between lower grades and depression. Female students in that study reported feeling more anxious. With these results no research has looked at these issues, in the Faisalabad area. This study fills that gap.

Theoretical Framework

The study is based on three theories that work together. The bio-social model, proposed by Engel in 1977 says that mental health is a result of biological, psychological and social factors that interact with each other. This model helps us understand how different factors affect health. Bandura's Social Cognitive Theory, from 1986 explains that when people have distress their academic self-efficacy suffers. This decrease in self-efficacy is a link between mental health and performance. In words when people are not feeling well mentally they tend to doubt their ability to do well academically. Maslow's Hierarchy of Needs introduced in 1943 tells us that people need to feel safe and secure before they can focus on learning. Productive thinking and learning require that basic psychological needs are met first. This means that if people are struggling to meet their needs they won't be able to engage fully in cognitive activities. The study uses these three theories to understand the connection, between health and performance.

Objective of the Study

The main objective of this study is to examine the impact of mental health encompassing depression, anxiety, and stress on the academic performance of university students in Faisalabad, Pakistan, with a view to generating context-specific, evidence-based insights that can inform institutional mental health policy and support services within Pakistani higher education.

Research Question

What is the prevalence and severity of depression, anxiety, and stress among university students?

Research Methodology

This study is based on quantitative data and surveys. A quantitative approach was used because the main goal is to measure the relationship between mental health variables and academic performance. This question needs numerical data, statistical analysis, and allows for generalization across a specific population. Survey-based data collection was chosen as the best way to gather standardized self-report data from a large group of students at the university. The research design is cross-sectional, which means data was collected at one time. This approach helps identify relationships between variables without the challenges of following up over time. This design matches what is commonly used in the quantitative study of mental health and academic performance in university populations (Richardson et al., 2012; Naqvi et al., 2020).

The study was conducted at four universities in Faisalabad, Pakistan two public and two private representing the major higher education institutions in the region.

#	University	Type	Abbreviation
1	University of Agriculture Faisalabad	Public	UAF
2	Government College University Faisalabad	Public	GCUF
3	National Textile University	Private	NTU
4	University of Faisalabad	Private	UOF

Population and Sampling

The target population was made up of all students who were enrolled at the four selected universities during the spring-2024 semester. Researchers used random sampling to choose the students. This means that each undergraduate student in the population had the chance of being selected. Researchers wanted to get 200 undergraduate students. So researchers got 50 undergraduate students, from each of the four universities.

Instrument

Mental health was assessed using the Depression, Anxiety, and Stress Scale-21 (DASS-21), a widely recognized instrument developed to evaluate three key psychological conditions: depression, anxiety, and stress. The scale consists of 21 items, with seven items assigned to each of the three dimensions. Participants responded to each statement using a four-point Likert scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time). To obtain scores comparable with the original 42-item version (DASS-42), the total score for each subscale was multiplied by two. The instrument demonstrated strong internal consistency in the present study, with Cronbach's alpha coefficients of 0.88 for depression, 0.87 for anxiety, and 0.85 for stress, indicating satisfactory reliability. Academic performance was evaluated based on students' self-reported Grade Point Average (GPA) on a 4.0 grading scale. The DASS-21 instrument used in this study was originally developed and validated by Lovibond and Lovibond (1995).

Data Analysis

Data were analyzed using **IBM SPSS Statistics Version 28.0**. Descriptive statistics were first computed to summarize the characteristics of the study variables. These included frequencies, percentages, means, standard deviations, and the distribution of participants across the DASS-21 severity categories.

To examine the relationships between mental health variables and academic performance, **Pearson's correlation analysis** was performed to determine the associations between depression, anxiety, stress, and students' Grade Point Average (GPA). **Multiple linear regression analysis** was subsequently conducted to identify the extent to which depression, anxiety, and stress predicted academic performance and to determine which psychological factor was the strongest predictor of GPA. In addition, **independent-samples t-tests** were employed to compare mental health scores and academic performance across gender and university type. Statistical significance was established at $p < .05$ for all analyses.

Results

The findings of the study are presented in three tables. **Table 1** summarizes the descriptive statistics of the study variables, including the DASS-21 scores and participants' GPA. **Table 2** presents the inferential statistical analyses, including Pearson's correlation coefficients, multiple linear regression results, and independent-samples t-test findings. **Table 3** provides the demographic characteristics of the study participants, including gender, age, academic level, and university type.

Table 1
Demographic Characteristics of the Study Sample (N = 200)

Variable	Category	N	%
Gender	Male	100	50
	Female	100	50
University	UAF (Public)	50	25
	GCUF (Public)	50	25
	NTU (Private)	50	25
	UOF (Private)	50	25
Year of Study	First Year	50	25
	Second Year	50	25
	Third Year	50	25
	Fourth Year	50	25
Field of Study	STEM	50	25
	Social Sciences	50	25
	Humanities	50	25
	Business	50	25

Note. UAF = University of Agriculture Faisalabad; GCUF = Government College University Faisalabad; NTU = National Textile University; UOF = University of Faisalabad. Percentages may not sum to 100 due to rounding.

Table 2
Descriptive Statistics: Mental Health Variables and Academic Performance

Variable	M	SD	Min	Max	Normal %	Mild %	Moderate %	Severe %	α
Depression (DASS-21)	15.62	7.41	0	38	31.1	18.1	28.5	22.3	.88
Anxiety (DASS-21)	17.28	8.03	0	40	27.5	16.1	31.6	24.8	.87
Stress (DASS-21)	19.04	7.62	0	40	29.0	17.6	30.1	23.3	.85
GPA (4.0 Scale)	2.68	0.61	1.10	4.00	—	—	—	—	—

Table 2 presents the descriptive statistics for the study variables based on a sample of **200 university students**. The average scores for **depression** ($M = 15.62$, $SD = 7.41$), **anxiety** ($M = 17.28$, $SD = 8.03$), and **stress** ($M = 19.04$, $SD = 7.62$) corresponded to the **moderate severity** category of the DASS-21. Furthermore, a substantial proportion of participants reported moderate to severe psychological symptoms, with **50.8%** experiencing depression, **56.4%** experiencing anxiety, and **53.4%** experiencing stress within these severity levels. These findings indicate that psychological distress was common among the students included in the study.

The DASS-21 subscales demonstrated high internal reliability, with **Cronbach's alpha coefficients ranging from .85 to .88**, confirming that the instrument consistently measured the intended psychological constructs within the sample. Regarding academic performance, the participants reported a mean **Grade Point Average (GPA)** of **2.68** ($SD = 0.61$), with scores ranging from **1.10 to 4.00**. Since the average GPA was below the commonly accepted benchmark of **3.00**, the findings suggest that many students experienced relatively low academic achievement.

Table 3

Inferential Statistics: Correlations, Regression, and Group Comparisons

Analysis / Variable	Statistic	Value	P	Effect Size
Section A: Pearson Correlations with GPA				
Depression $\times$ GPA	R	-.43	<.001	Large
Anxiety $\times$ GPA	R	-.37	<.001	Moderate
Stress $\times$ GPA	R	-.29	<.001	Moderate
Section B: Multiple Regression Predictors				
Depression (beta)	beta = -.31	t = -4.28	<.001	—
Anxiety (beta)	beta = -.19	t = -2.88	.004	—
Stress (beta)	beta = -.11	t = -1.96	.051	—
Model Fit	$R^2 = .21$	Adj. $R^2 = .1$ F(6	,186) = 8.27	p < .001
Section C: Gender Differences t-test				

Depression: Male vs. Female	t(191) = 2.81	M: 13.84 vs. 17.46	.005	d = 0.41
Anxiety: Male vs. Female	t(191) = 2.44	M: 15.62 vs. 18.99	.015	d = 0.35
GPA: Male vs. Female	t(191) = 0.65	M: 2.72 vs. 2.64	.516	d = 0.09
Section D: University Type Differences				
Depression: Public vs. Private	t(191) = 1.98	M: 16.83 vs. 14.39	.049	d = 0.28
GPA: Public vs. Private	t(191) = 2.87	M: 2.54 vs. 2.82	.004	d = 0.41

All correlations significant at $p < .001$. Depression is the strongest predictor of GPA ($\beta = -.31, p < .001$). Female students reported significantly higher depression and anxiety than males. Public university students showed higher depression and lower GPA than private university students.

Discussion

The primary objective of this study was to examine the effect of mental health on the academic performance of university students in Faisalabad, Pakistan. The findings provide strong empirical evidence that psychological well-being is closely associated with students' academic success. Specifically, higher levels of depression and anxiety were found to significantly reduce students' Grade Point Average (GPA), while stress also showed a negative association with academic performance. These results indicate that mental health problems represent an important barrier to academic achievement among university students.

Prevalence and Severity of Mental Health Problems

The findings revealed that psychological distress was common among the participating students. Based on the DASS-21 assessment, approximately (50.8%) of students experienced moderate to severe symptoms of depression, (56.4%) reported moderate to severe anxiety, and 53.4% experienced moderate to severe stress. The average scores for depression ($M = 15.62$), anxiety ($M = 17.28$), and stress ($M = 19.04$) all fell within the moderate severity category.

These prevalence rates exceed the global estimates reported by Ibrahim et al. (2013) and are generally consistent with previous studies conducted in Pakistan (Naqvi et al., 2020; Rana et al., 2021). The high levels of psychological distress observed in this study may be explained by several contextual factors, including academic workload, examination pressure, financial challenges, family expectations, uncertainty regarding future employment, and limited availability of mental health services within higher education institutions in Faisalabad.

Academic Performance of Students

The participants reported an average GPA of **2.68** ($SD = 0.61$), which falls below the commonly accepted benchmark of **3.00** for satisfactory academic performance. This finding suggests that a considerable proportion of students were experiencing academic difficulties. The relatively low GPA observed alongside elevated psychological distress supports established educational theories. According to **Cognitive Load Theory** (Sweller, 1988), excessive emotional stress consumes cognitive resources that are essential for learning, concentration, and problem-solving. Similarly, **Bandura's Self-Efficacy Theory** (1986) proposes that emotional difficulties reduce students' confidence in their academic abilities, leading to lower motivation, reduced persistence, and weaker academic outcomes.

Relationship between Mental Health and Academic Performance

Pearson correlation analysis demonstrated statistically significant negative relationships between all three mental health variables and GPA. Depression showed the strongest correlation with academic performance ($r = -.43, p < .001$), followed by anxiety ($r = -.37, p < .001$) and stress ($r = -.29, p < .001$). These findings indicate that increases in psychological distress are associated with decreases in students' academic achievement.

The observed relationships are consistent with previous international research (Richardson et al., 2012), which has consistently shown that poor mental health negatively influences academic success. The present study extends this evidence by demonstrating that similar patterns exist among university students in Faisalabad, highlighting the importance of addressing mental health within Pakistani higher education institutions.

Depression as the Strongest Predictor of Academic Performance

Multiple linear regression analysis identified **depression** as the strongest predictor of GPA ($\beta = -.31, p < .001$), followed by anxiety ($\beta = -.19, p = .004$). Although stress was negatively related to GPA, it was no longer statistically significant after controlling for depression and anxiety ($\beta = -.11, p = .051$). This finding suggests that much of the influence of stress on academic performance overlaps with the effects of depression and anxiety.

Overall, the regression model explained **21%** of the variance in GPA ($Adjusted R^2 = .18$), indicating that mental health contributes substantially to academic performance while acknowledging that additional academic, personal, and environmental factors also influence students' achievement. The dominant effect of depression supports Bandura's (1986) assertion that depressive symptoms reduce academic self-efficacy, motivation, concentration, and persistence, thereby limiting students' academic success.

Differences by Gender and University Type

The study also examined differences in mental health and academic performance across gender and university type. Female students reported significantly higher levels of depression and anxiety than male students. However, no statistically significant gender difference was found in GPA. This finding suggests that although female students experienced greater psychological distress, they were able to maintain academic performance comparable to their male counterparts, possibly through effective coping strategies, stronger academic commitment, or greater resilience.

Differences were also observed between public and private universities. Students enrolled in public universities reported significantly higher levels of depression and lower GPAs than students attending private universities. These differences may reflect variations in institutional resources, student support services, class size, learning environments, and access to counselling facilities. The findings suggest that institutional characteristics may influence both students' psychological well-being and their academic achievement.

Conclusion

This study provides clear evidence that mental health plays a significant role in determining the academic performance of university students in Faisalabad, Pakistan. Depression, anxiety, and stress were all negatively associated with students' Grade Point Average, with depression emerging as the strongest predictor of reduced academic performance. More than half of the participants experienced moderate to severe psychological distress, while the overall mean GPA remained below the generally accepted standard for satisfactory academic achievement.

These findings highlight the urgent need for universities to recognize mental health as an essential component of student success rather than solely a personal health concern. Strengthening counselling services, promoting mental health awareness, implementing early screening

programs, and developing supportive academic environments may help reduce psychological distress and improve educational outcomes. Investing in students' mental well-being is therefore likely to benefit not only individual learners but also the overall quality and effectiveness of higher education institutions in Pakistan.

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