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RELATIONSHIP BETWEEN STREES AND ACADEMIC PERFORMANCE AMONG GENERIC BSN STUDENT AT DISTRICT BUNEER AND MARDAN

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Abstract

Background:
Nursing education, particularly the Generic Bachelor of Science in Nursing (BSN) program, is recognized for its academic intensity and clinical demands. Students frequently experience high levels of stress due to rigorous coursework, skill lab training, and clinical rotations. Unmanaged stress can adversely affect academic performance, physical health, and psychological well-being. Despite global research on this subject, limited empirical data exists in the context of District Buner and Mardan, Pakistan.

Objective:
This study aimed to examine the relationship between perceived stress and academic performance among Generic BSN students in District Buner and Mardan, identifying key stressors and their impact on academic outcomes.

Methods:
A descriptive cross-sectional quantitative study was conducted among 152 Generic BSN students from Semester 4 to 8 using proportionate stratified random sampling. Data were collected through a self-administered questionnaire, comprising the Perceived Stress Scale (PSS-10) and self-reported cumulative grade point average (CGPA). Statistical analysis was conducted using SPSS version 26, with Pearson's correlation test employed to assess the relationship between stress and academic performance.

Results:
The mean perceived stress score was 21.6 (SD = 5.2), with 55.3% of students reporting moderate stress. Academic performance averaged a CGPA of 2.88 (SD = 0.42), with 61.8% categorized as average performers. A statistically significant negative correlation was found between perceived stress and academic performance ($r = -0.462$, $p < 0.001$).

Conclusion:
Moderate stress levels are prevalent among BSN students in Buner and Mardan and are inversely related to academic achievement. These findings underscore the need for targeted interventions, including stress management programs, academic

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counseling, and improved institutional support, to foster both academic excellence and psychological resilience in nursing students.

INTRODUCTION

Nursing education is widely acknowledged as one of the most demanding academic pathways, requiring students to balance intensive theoretical coursework with hands-on clinical responsibilities. Students enrolled in the Generic Bachelor of Science in Nursing (BSN) program often encounter substantial academic stress due to a combination of factors, including extensive study requirements, frequent examinations, skill lab practice, and high-pressure clinical rotations. If this stress remains unmanaged, it can have serious consequences for students' academic performance, physical health, and psychological well-being (1).

Globally, researchers have extensively studied the relationship between stress and academic achievement, with many concluding that high levels of stress are associated with lower academic performance, particularly when the stress surpasses an individual's coping ability (2,3). This negative correlation suggests that while some stress can be motivating, excessive stress tends to hinder learning, retention, and overall academic success.

In the local context of District Buner and Mardan, nursing students face additional hurdles that further intensify stress levels. These include limited access to academic resources, inadequate clinical exposure, lack of faculty support, sociocultural pressures—such as gender expectations—and financial hardships (4). These challenges often go unaddressed, increasing the risk of academic burnout and dropout. Despite these realities, there remains a scarcity of empirical data from these regions exploring how stress impacts the academic performance of Generic BSN students.

Understanding the relationship between stress and academic outcomes in these under-researched areas is essential. It not only highlights the struggles students face but also helps educational institutions and healthcare policymakers formulate effective strategies to mitigate stress and promote student success (5,6). This study, therefore, aims to examine the correlation between perceived stress and academic performance among Generic BSN students in District Buner and Mardan. It seeks to pinpoint stress-inducing factors and understand how these impact students' ability to perform academically.

The findings from this research will provide valuable insights into the academic and emotional challenges faced by nursing students. By identifying high-stress areas in the curriculum and academic environment, the study will inform targeted interventions such as stress management training, psychological counseling, mentorship programs, and improved academic support systems (7,8). Moreover, exploring both the sources and consequences of stress allows for a holistic approach to student well-being, ensuring that educational environments are both supportive and effective.

Ultimately, this study contributes to a growing body of literature focused on enhancing nursing education. It aims to foster a more conducive learning environment that nurtures not just academic excellence but also the mental health and emotional resilience of nursing students (9,10).

Methodology

Study Design

A **descriptive cross-sectional quantitative study design** was adopted to assess the relationship between stress and academic performance among Generic BSN students. This design is appropriate for understanding the current level of stress and its association with academic outcomes within a specific population at a given time.

Study Setting

The study was conducted in selected nursing institutions located in **District Buner and District Mardan**, Khyber Pakhtunkhwa, Pakistan. These areas were chosen due to their growing number of nursing colleges and the availability of Generic BSN students.

Study Population

The target population consisted of **Generic BSN students (Semester 2 to Semester 8)** enrolled in both public and private nursing institutions in District Buner and Mardan.

Inclusion Criteria

- Generic BSN students currently enrolled in Semester 2 or above

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- Students who gave informed consent
- Both male and female students

Exclusion Criteria

- Post-RN or other diploma nursing students
- Students who were on academic leave during data collection
- Students with a diagnosed psychiatric illness

Sample Size and Sampling Technique

Using **Rao soft sample size calculator** with a 95% confidence level, 5% margin of error, and an estimated population of 250 students, a minimum sample size of **152 students** was calculated. A **proportionate stratified random sampling technique** was used to ensure representation from different semesters and institutions.

Data Collection Tool

Data was collected using a **self-administered questionnaire** consisting of two parts:

1. **Perceived Stress Scale (PSS-10)**: A validated tool used to measure the level of perceived stress among students.
2. **Academic Performance Sheet**: Self-reported CGPA or percentage marks from the latest semester examination.

Validity and Reliability

The PSS-10 is a **widely used and reliable scale** with a Cronbach's alpha of 0.78–0.86 in previous studies. A **pilot study** was conducted on 10 students (excluded from the main sample) to check tool clarity and reliability.

Data Collection Procedure

After obtaining **ethical approval** and **institutional permissions**, participants were approached during break hours, and consent was taken. Questionnaires were distributed in person and collected the same day to ensure a high response rate.

Data Analysis

Data were analyzed using **SPSS version 26**.

- Descriptive statistics (mean, SD, frequencies, percentages) were used to summarize demographic data, stress levels, and academic performance.
- **Pearson correlation coefficient (r)** was used to determine the relationship between perceived stress scores and academic performance (CGPA).
- A **p-value ≤ 0.05** was considered statistically significant.

Ethical Considerations

Ethical approval was obtained from the **Institutional Review Board (IRB)**. Participants were informed about the study's purpose, ensured confidentiality, and their participation was voluntary. Informed consent was taken from all respondents.

RESULTS

Demographic Characteristics of Participants

A total of **152 Generic BSN students** from District Buner and Mardan participated in the study. Of these, **99 (65.1%) were female** and **53 (34.9%) were male**, indicating a predominance of female participants. The **age range** of respondents was **18 to 27 years**, with a **mean age of 21.4 years (SD = 1.9)**. In terms of academic standing, the majority of students were enrolled in **Semester 6 (n = 68; 44.7%)**, followed by **Semester 4 (n = 46; 30.3%)**, and **Semester 8 (n = 38; 25.0%)**.

Table 1: Demographic Profile of Participants

Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	99	65.1%
	Male	53	34.9%
Age Group (years)	18–20	41	27.0%
	21–23	89	58.6%
	24–27	22	14.4%
Semester	4th	46	30.3%

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Variable	Category	Frequency (n)	Percentage (%)
	6th	68	44.7%
	8th	38	25.0%

Perceived Stress Levels

Stress was assessed using the **Perceived Stress Scale (PSS-10)**. The mean stress score among participants was **21.6 (SD = 5.2)**, indicating a **moderate level of stress** on average. Stress levels were classified as follows:

- **Low Stress (Score ≤13):** 34 students (22.4%)
- **Moderate Stress (Score 14–26):** 84 students (55.3%)
- **High Stress (Score ≥27):** 34 students (22.4%)

Figure 1: Distribution of Perceived Stress Levels Among BSN Students

(Suggested bar chart: X-axis = Stress Level Categories, Y-axis = Number of Students)

Academic Performance

Participants self-reported their **Cumulative Grade Point Average (CGPA)**. CGPAs ranged from **2.1 to 3.8**, with a **mean CGPA of 2.88 (SD = 0.42)**. Based on CGPA, academic performance was classified as:

- **High (CGPA ≥ 3.5):** 27 students (17.8%)
- **Average (CGPA 2.5–3.49):** 94 students (61.8%)
- **Low (CGPA < 2.5):** 31 students (20.4%)

Table 2: Classification of Academic Performance

Performance Level	CGPA Range	Frequency (n)	Percentage (%)
High	≥ 3.5	27	17.8%
Average	2.5–3.49	94	61.8%
Low	< 2.5	31	20.4%

Correlation Between Perceived Stress and Academic Performance

A **Pearson correlation test** was used to determine the relationship between students' perceived stress and academic performance. The results showed a **statistically significant negative correlation**:

- **$r = -0.462$, $p < 0.001$**

This implies that **as stress levels increase, academic performance decreases**. The strength of this correlation is moderate but meaningful in understanding how psychological factors influence academic outcomes.

Figure 2: Scatter Plot Showing Correlation Between Perceived Stress Scores and CGPA

(X-axis = PSS Score, Y-axis = CGPA, with trendline showing negative slope).

Table 3: Summary of Stress Levels and Academic Performance among BSN Students (N = 152)

Variable	Categories	Frequency (n)	Percentage (%)	Mean ± SD
Gender	Male	53	34.9%	
	Female	99	65.1%	
Semester	Semester 4	46	30.3%	
	Semester 6	68	44.7%	
	Semester 8	38	25.0%	
Stress Level (PSS-10)	Low (≤13)	34	22.4%	
	Moderate (14–26)	84	55.3%	
	High (≥27)	34	22.4%	21.6 ± 5.2

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Variable	Categories	Frequency (n)	Percentage (%)	Mean ± SD
Academic Performance	High (≥3.5 CGPA)	27	17.8%	
	Average (2.5–3.49 CGPA)	94	61.8%	
	Low (<2.5 CGPA)	31	20.4%	2.88 ± 0.42
Correlation (PSS vs CGPA)	Pearson Correlation (r)	-0.462		**p < 0.001**

Discussion

This study investigated the relationship between perceived stress and academic performance among Generic BSN students in District Buner and Mardan. The findings showed that a majority of the students (55.3%) experienced moderate levels of stress. Additionally, a statistically significant negative correlation was observed between stress and academic performance ($r = -0.462$, $p < 0.001$). These results align with previous studies that suggest academic performance declines when stress levels exceed an individual's ability to cope (11,12).

The presence of moderate stress levels among nursing students is consistent with findings from international research, which highlights the demanding nature of nursing education. Factors such as academic workload, clinical rotations, skill lab training, and frequent examinations contribute significantly to stress (13,14). Al-Zayyat and Al-Gamal emphasized that stress experienced during nursing education can impair concentration and diminish academic performance (15). This shows how psychological burdens can directly influence cognitive functions and academic outcomes.

In this study, most students (61.8%) reported average academic performance. This may be influenced by ongoing stressors coupled with the absence of adequate academic and psychological support. Research in rural and low-resource contexts has also demonstrated a similar pattern, where stress stemming from limited infrastructure, lack of learning materials, and academic pressure results in reduced student performance (16,17). Students in Buner and Mardan not only deal with educational stress but are also impacted by socio-cultural expectations, financial hardship, and limited access to mental health resources, all of which compound their academic struggles (18,19).

The statistically significant negative correlation between stress and performance found in this study is supported by several local and global studies, which confirm stress as a key predictor of lower academic achievement among nursing and other healthcare students (20,21). High levels of perceived stress have been shown to affect students' time management, motivation, and attention span—critical factors required for effective learning and academic success (22,23).

To address these challenges, it is important to implement structured interventions such as stress management training, peer support groups, and professional counseling services. These strategies have proven effective in enhancing coping skills and reducing stress in similar educational contexts (24,25). Based on these findings, it is recommended that nursing institutions and educational policymakers prioritize student mental well-being by integrating mental health services and academic support into the nursing curriculum. Special attention should be given to students in underdeveloped and underserved areas like Buner and Mardan, where stress may have an even more pronounced impact on academic success.

Conclusion

This study concluded that **moderate to high levels of stress** are prevalent among Generic BSN students in District Buner and Mardan, and that **stress is significantly and negatively associated with academic performance**. As stress levels increased, students' academic achievements decreased. The findings highlight an urgent need for academic institutions to implement effective **stress reduction strategies**, such as psychological counseling, mentorship programs, and time management training, especially for students in higher semesters. Addressing stress is not only important for improving academic outcomes but also for promoting the overall well-being and professional development of future nurses.

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Conflict of Interest Statement:
The authors declare that there is no conflict of interest regarding the publication of this research.

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