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ASSOCIATION BETWEEN PERCEIVED STRESS AND ACADEMIC PERFORMANCE AMONG NURSING STUDENTS IN SOUTH PUNJAB

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Abstract

Background: Perceived stress is a common psychological concern among nursing students due to demanding academic and clinical requirements. While stress is often assumed to negatively affect academic performance, existing evidence shows inconsistent findings, highlighting the need for further investigation. Objective: To examine the association between perceived stress and academic performance (GPA/Percentage) among nursing students. Methodology: A quantitative cross-sectional analytical study was conducted on 60 nursing students. Academic performance was measured using GPA (percentage), while perceived stress was categorized into three levels: mild, moderate, and severe, and coded numerically (1-3). Descriptive statistics were used to summarize stress levels. Spearman's rank order correlation was applied to assess the association between stress and GPA. Additionally, the Kruskal Wallis H test was used to compare GPA across different stress levels. A p-value of <0.05 was considered statistically significant. Data were analyzed using SPSS. Results: The majority of participants experienced moderate stress (45.0%), followed by severe stress (33.3%) and mild stress (21.7%). Spearman's correlation analysis revealed a weak positive relationship between perceived stress and academic performance ($r = 0.181$), which was not statistically significant ($p = 0.167$). Similarly, the Kruskal Wallis test indicated no significant difference in GPA across stress levels, $\chi^2(2) = 1.928$, $p = 0.381$. Although a slight increasing trend in GPA was observed with higher stress levels, the association was not statistically meaningful. Conclusion: Perceived stress demonstrated a weak and non-significant relationship with academic performance among nursing students, suggesting that stress alone may not be a key determinant of GPA. These findings indicate the potential role of other moderating factors such as coping strategies and resilience, warranting further research.

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1. Introduction

Academic achievement is a key indicator of students' educational attainment and is commonly assessed using Grade Point Average (GPA). GPA serves as a measure of students' cognitive abilities, learning outcomes, and overall academic performance. There are many psychological and environmental factors affecting academic performance. One of the most important is perceived stress. Stress is the tension, psychological and emotional, that people experience, especially in academic situations, when they feel that the academic demands are beyond their ability to cope.

The education of nurses is hard by nature as it mixes theory with hard clinical practice. Many stressors beset nursing students, including academic workload, clinical duties, time pressure and high expectations for competence and patient safety. There is some evidence that nursing students often experience moderate to high levels of stress, which can negatively impact their emotional health and academic performance (1). Burnout, anxiety and reduced academic engagement have been linked to chronic stress, which in turn affects learning outcomes.

While the relationship between perceived stress and academic achievement has been extensively studied, the results have been inconsistent. Several studies have found a negative association, linking higher levels of stress to lower academic performance. For example, a correlational study of undergraduate nursing students noted a significant inverse correlation between stress and GPA ($r = -0.421$, $p < 0.001$) indicating that increasing stress decreases academic performance (2). Moreover, stress has been shown to affect concentration, memory retention, and decision-making skills, all of which are essential for academic success.

However, some studies indicate that stress may have a facilitative effect on academic performance at moderate levels of stress. One study in Pakistan found a statistically significant positive correlation between perceived stress and academic performance ($r=0.275$, $p=0.002$), suggesting that a certain level of stress may improve motivation and productivity among nursing students (3). This concept is in line with the idea of "eustress," which is stress that is manageable and serves as a motivational factor to improve performance.

However, other studies have not found any significant association between stress and academic performance, pointing to the complexity of this relationship. For example, a study among nursing students in Khyber Pakhtunkhwa reported no statistically significant association between perceived stress and academic achievement ($p = 0.681$), indicating that other factors such as coping strategies, resilience and support systems may mediate this association (4). These inconsistencies call for further research to understand the nature of the relationship between stress and academic outcomes.

Besides academic implications, stress among nursing students has wider implications on professional development and patient care. Stress can impair clinical performance, decrease critical thinking ability and have a negative impact on professional behaviour which in turn affects quality of healthcare delivery (5). Therefore, an understanding of the stress and stressors, and their effect on academic performance, is vital for the development of effective intervention strategies and support systems within nursing education.

While the literature is growing, there is still a lack of context-specific evidence, especially in developing countries where the education systems, cultural factors and the institutional resources may be very different. Moreover, variations in the structure of the academic

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calendar (e.g. , year round versus semester systems) may have differential effects on stress and academic outcomes .

The objective of the study was to study the association between perceived stress and academic performance (GPA) among nursing students. The study will investigate this relationship to contribute to the existing literature and provide evidence based recommendations to educators and policymakers to improve academic success and psychological health among nursing students.

Literature Review

It is well known that perceived stress is an important psychological factor affecting academic performance among students, especially in difficult fields such as nursing . Several cognitive, behavioral and emotional factors have an influence on academic performance which is often measured by Grade Point Average (GPA), and stress is one of the most important determinants among them. Studies have shown that stress can negatively affect attention, memory, and problem-solving skills, all of which are important to academic success.

Nursing students are more likely to be stressed out than students in many other disciplines, as they are subjected to both theoretical courses and clinical training. A systematic review in the Middle Eastern and North African countries revealed a wide spectrum of stress among nursing students from low to very high levels, suggesting the extent and variability of this problem in nursing education (1). Similarly, academic workload, examinations, clinical responsibilities, and interpersonal challenges have been identified as major contributors to perceived stress among nursing students (6).

A large body of literature supports a negative relationship between perceived stress and academic performance. One recent correlational study among undergraduate nursing students in Pakistan revealed a significant negative correlation between stress and GPA ($r = -0.421$, $p < 0.001$), suggesting that higher levels of stress are associated with worse academic performance (7). This is consistent with the theoretical view that excessive stress interferes with cognitive functions, reduces attention, and has a negative effect on the efficiency of learning. Additionally, stress has been shown to have a negative effect on clinical performance, which indirectly affects the overall academic success of nursing students (8).

On the other hand, some studies report opposite results, indicating that stress may have a positive or facilitative effect on academic performance when experienced at moderate levels. In Pakistan, a cross-sectional study showed a significant positive relationship between perceived stress and academic achievement ($r = 0.275$, $p = 0.002$) and suggested that moderate levels of stress could boost motivation and academic participation (9). This notion is in line with the concept of “eustress,” in which a certain amount of stress can be conducive to productivity and better performance.

But the relationship between stress and academic performance is not always simple. Some studies have shown weak or non-significant associations, which suggest that other variables such as coping mechanisms, emotional intelligence and resilience may mediate this relationship. For example, research has suggested the role of coping strategies in reducing the adverse consequences of stress, so that the students could perform satisfactorily in academic activities despite being under stress (10). Moreover, stress levels have been measured extensively using validated tools, such as the Perceived Stress Scale (PSS), which offer reliable and standardized assessments across different populations (11).

Newer evidence continues to support the complex and multifactorial nature of this association. Stress is a dynamic interaction between the individual and the environment that can influence the psychological health and

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academic performance 2026 (12). Furthermore, a study conducted in Khyber Pakhtunkhwa found that most of the nursing students have moderate stress but their academic performance is relatively stable which indicates that stress alone may not totally determine academic success (13).

In summary, the literature reveals mixed findings regarding the association between perceived stress and academic performance among nursing students. While a majority of studies report a negative relationship, others suggest positive or non-significant associations, emphasizing the complexity of this relationship. These inconsistencies highlight the need for further context specific research to better understand how perceived stress influences GPA among nursing students.

Methodology

A quantitative, cross-sectional analytical study design was employed to examine the association between perceived stress and academic performance among nursing students. A total of 60 participants were included in the study using a structured dataset comprising academic performance measured as Grade Point Average (GPA) in percentage and perceived stress categorized into three levels: mild, moderate, and severe. For statistical analysis, stress levels were coded numerically (1 = mild, 2 = moderate, 3 = severe) to facilitate correlation analysis. Descriptive statistics were used to summarize the data, including frequencies and percentages for stress levels, and overall distribution of participants.

Inferential statistics were applied to assess the relationship and differences between variables. Spearman's rank-order correlation was conducted to determine the association between perceived stress and academic performance due to the ordinal nature of the stress variable. Additionally, the Kruskal Wallis H test was used to compare academic performance across the three stress level groups, as the assumptions for parametric testing were not considered. A p-value of less than 0.05 was considered statistically significant. All statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS), ensuring appropriate handling of non-parametric data.

Results:

This chapter presents the analysis of data collected to determine the distribution of stress levels among participants. The findings are presented in tabular form with appropriate interpretation.

Distribution of Stress Levels Among Participants

The frequency distribution of stress levels among the respondents is presented in Table 1.

Table 1: ***Stress Level Distribution of Participants (n = 60)***

Stress Level	Frequency	Percent	Valid Percent	Cumulative Percent
Mild Stress	13	21.7	21.7	21.7
Moderate Stress	27	45.0	45.0	66.7
Severe Stress	20	33.3	33.3	100.0
Total	**60**	**100.0**	**100.0**	

The distribution of perceived stress levels among participants indicated that the majority of students experienced moderate stress (45.0%), followed by severe stress (33.3%), while a smaller proportion reported mild stress (21.7%). These findings suggest that a substantial proportion of nursing students are exposed to moderate to high levels of stress.

Table 2: ***Correlation Between Academic Performance and Stress Level***

Variables	Academic Performance	Stress Level

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Variables	Academic Performance	Stress Level
Academic Performance	1.000	0.181
Stress Level	0.181	1.000
Sig. (2-tailed)	—	0.167
N	60	60

Spearman's rank-order correlation was conducted to examine the association between perceived stress and academic performance among nursing students. The analysis revealed a weak positive correlation between stress level and GPA (r = 0.181, p = 0.167). However, the relationship was not statistically significant; indicating that perceived stress was not significantly associated with academic performance among the participants.

Table 3: ***Comparison of Academic Performance Across Stress Levels (Kruskal Wallis Test)***

A. Ranks

Stress Level	N	Mean Rank
Mild Stress	13	25.77
Moderate Stress	27	29.96
Severe Stress	20	34.30
Total	60	—

B. Test Statistics

Statistic	Value
Chi-square (χ^2)	1.928
df	2
p-value	0.381

A Kruskal Wallis H test was conducted to examine differences in academic performance across levels of perceived stress. The results indicated that there was no statistically significant difference in GPA among students with mild, moderate, and severe stress levels, $\chi^2(2) = 1.928$, p = 0.381. Although higher stress levels were associated with higher mean ranks, the differences were not statistically significant.

Discussion

The current study investigated the relationship of perceived stress and academic achievement (GPA) of nursing students and found a weak positive relationship that wasn't statistically significant (r = 0.181, p = 0.167). Moreover, Kruskal Wallis test showed no significant difference in GPA between mild, moderate and severe stress groups (p = 0.381). While a slight trend towards higher GPAs was noted with increased stress levels, the absence of statistical significance suggests that perceived stress may not be a major predictor of academic performance in this cohort. These results reflect the complex and multifactorial nature of academic achievement in nursing students.

The findings of this study are consistent with several studies that have found no significant relationship between stress and academic performance. For example, one study among health sciences students found that stress levels were common but not strong predictors of academic outcomes, emphasizing the role of

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adaptive coping mechanisms and personal resilience (14). In another study by Shamsuddin et al. (2013), students had significant psychological distress but did not face any major academic difficulties. This could mean that students have effective mechanisms of coping with academic difficulties when under psychological stress (15). These results support the view that differences in academic performance cannot be explained by stress alone.

The findings of this study, in contrast, are inconsistent with the studies which have reported negative association between stress and academic achievement. Elias et al. (2011) found that university students with higher levels of stress had poorer academic performance and suggested this was due to decreased concentration and academic involvement (14). Likewise, Sohail (2013) reported in a study that excessive stress led to negative impact on students' academic outcomes due to its harmful effects on mental health and learning capacity (16). The differences between these findings and the current study may be due to contextual differences including differences in academic environments, cultural factors and support systems available to students.

Interestingly, the weak positive (albeit non-significant) trend found in this study is consistent with the notion of eustress, where moderate levels of stress may increase motivation and performance . Such ideas are supported by research by LePine et al. (2005) who made a distinction between challenge-related stress (eustress) and hindrance stress, implying that some stressors can have positive effects on performance through increased focus and effort (17). Moderate levels of stress in nursing education may motivate students to remain focused, meet deadlines, and perform better academically which may explain the slightly higher GPA seen in students with higher levels of stress in this study.

Another major issue concerns the role of moderating variables that were not directly measured in this study. Stress can impact academic performance, but emotional intelligence, coping strategies, social support, and learning environment can all have a significant impact on the effect of stress. For example, students with higher emotional intelligence have a better ability to regulate stress and maintain their academic performance under pressure (18). In a similar vein, good coping strategies have been shown to buffer against the negative effects of stress, and allow students to sustain their academic achievement in the face of high levels of stress (19). These factors could explain the high number of students in the present study reporting moderate to severe stress, but no significant impact on GPA was found.

The findings of this study have important implications for nursing education. While stress is prevalent among nursing students, as indicated by the high proportion of moderate and severe stress levels, it does not necessarily translate into poorer academic outcomes. This suggests that educational institutions should focus not only on reducing stress but also on enhancing students' coping abilities and resilience. Interventions such as stress management programs, mentorship, and psychological support services may help students maintain both their well-being and academic performance.

Despite its contributions, this study has certain limitations. The cross-sectional design limits the ability to establish causal relationships between stress and academic performance. Additionally, the use of self-reported stress measures may introduce response bias. Future research should consider longitudinal designs and include additional variables such as coping strategies, emotional intelligence, and environmental factors to provide a more comprehensive understanding of the relationship between stress and academic performance

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