Determinants of Stress and Its Association with Academic Performance of Undergraduate Students of Nursing in Pakistan

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Abstract

Nursing education consists of theoretical education and clinical duties; therefore, they have to deal with assignments, presentations, continuous assessment tests, theory exams, and clinical skills within a limited time frame. When the load increases beyond the students' limit, stress increases among them. In this regard, the focus of current study is to find out the academic performance and factors that are associated with stress in undergraduate students. A cross-sectional descriptive study was conducted from June to August 2023 with a sample size of 260 using a simple random sampling technique. Two valid and reliable questionnaires were used for data collection: Perceived Stress Scale (PSS) for stress factors and level while GPA for academic performance used among respondents. The total number of participants was 260, while the number of male students was high (85%), the average age of participants was (21.4 ± 2.2%), and the academic performance of the majority of students was good (69.6%). "Assignment and workload stress (2.44 ± 0.64)", followed by "environmental stress" (2.34 ± 0.68) and "patient care stress (2.16 ± 0.61) are the main factors that contribute to the level of stress among university students. The study concluded that the majority of college students suffered from moderate stress, and the main reason that contributes to their stress is assignments and workload.

Keywords: Academic Performance, Clinical Practice, Nursing Education, Stress

Introduction

The term "nursing education" describes formal instruction and preparation for the nursing profession. It comprises roles and duties in the area of physical patient care as well as a range of specialties that both hasten and support a patient's return to health. Over the decades, there have been substantial changes to nursing and nursing education. This history reflects an ongoing struggle for professionalism and independence. Nursing education consists of broad theoretical knowledge and skills acquisition in clinical practice (Doyle et al., 2017). Nursing students hone

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their practical competencies, clinical decision-making, and communication skills during clinical practice as they are the future of the nursing workforce. During their clinical duties, students face a new environment that is entirely different from the internal environment of the institute. Therefore, students are initially exposed to many pressures and challenges in a complicated clinical environment, mainly in the first months of their clinical duties (Liu et al., 2022). Clinical education remains an essential part of nursing education because it not only improves students' practical skills and knowledge but also provides an opportunity to apply theoretical knowledge in practice (Lee et al., 2018).

Nursing students have put much effort into their clinical work and nursing organization involvement throughout the semesters to improve their grades and ranks. Subsequently, they face psychological problems that affect their performance. Each pupil experiences these problems differently; they differ in severity. Stress is a psychological, emotional state or circumstance to which an individual reacts when they feel under pressure or threatened (Sultan et al., 2022). Nursing students have to deal with assignments, presentations, mid-term assessment tests, theory exams, and clinical skills within a limited time frame. When the load increases beyond the students' limit, stress increases among them (Moffat et al., 2004). Stress not only impairs students' academic and clinical performance but also leads to serious psychological problems such as depression (Riley et al., 2019).

Nursing students frequently experience social stress, personal stress (such as anxiety stemming from their uncertain future), and interface worries. Students may also encounter additional stressors, such as family issues and physical problems (Hirsch et al., 2015). Furthermore, nursing students may experience interpersonal stress either from monetary obligations or interpersonal interactions with fellow students. Positive life events like marriage, graduation, or beginning a new career can cause these anxieties, as can adverse life events like losing a job, getting divorced, or losing a family member. According to Al-Barak et al. (2011), all of these stressors may hurt students' academic performance. Previous studies revealed that nursing students suffer from stress (Admi et al., 2018), while other studies reported that stressors during clinical duties were lack of knowledge and skills, workload, fear of making mistakes, patient care and emergency management (Zhao et al., 2015; Labrague et al., 2017, pg. 9). In addition, stress affects students' academic performance, overall health, clinical routine, and quality of life (Labrague et al., 2018). Numerous studies have found that a substantial percentage of health students, particularly those studying medicine and nursing, experience academic stress (Goff, 2011; Yamashita et al., 2012; Rafati et al., 2017). Therefore, it is crucial to research the stressors that nursing students face because they hurt their health and cognitive function, leading to the emergence of mental illnesses like depression, anxiety, eating disorders, sleep disorders, and substance abuse (Rafati et al., 2017). Stress can also cause students to become less effective communicators and inefficient workers, which lowers the standard of healthcare services (Rafati et al., 2017). Therefore, the study aimed to determine the level of academic performance and factors that contribute to stress in nursing students.

Materials and Methods
Study design and study sample
The study was conducted in nursing facilities from June to August 2023 using a descriptive cross-sectional design. The study population of the study was the students who were registered in any registered nursing college of Khyber Pakhtunkhwa. The study sample was calculated using an

online sample size calculator using a 95% confidence level, 5% margin of error, and 80% prevalence rate, giving us a sample size of 260 using a simple random sampling technique.

Inclusion criteria were students currently enrolled in any semester of a 4-year program and willing to participate in this study. Students performing clinical duties, on leave, non-promotion, and unwilling to participate were excluded from the study.

The data was collected in three parts: part (a) contains the demographic data of the participants, part (b) contains the stress level through a checklist, and part (c) contains the stress management strategies of the participants.

The Perceived Stress Scale (PSS) was used for the level of stress among the student participants. The checklist contains six items of dimension 29 with a 5-point Likert scale from 0 never to 4 often. The instrument's Cronbach alpha was 0.89 (Sheu et al., 1997).

Academic performance: The academic performance of the study was evaluated through (*GPA) grade point average*, which is divided into poor (2.8 and below), average (2.81 to 3.4), and high performance (3.41 and above).

The entire data set used in this study was analyzed using SPSS 22.0 statistical software. Standard deviations, means, frequencies, and percentages were included in the data analysis to describe the study sample as descriptive statistics. Pearson's correlation test was used to identify the relationship between stress and coping behavior as an inferential statistic.

Individuals participated in this project voluntarily, and all responses were kept confidential. The introduction to the questionnaire includes a statement that outlines the objectives, plans, and use of the data.

The study was approved by the ethical review board, with each institution obtaining permission to collect data.

Results

Demographic Data

The total number of students in the study was 253, where males were higher (85%) than females (15%). The mean age of the students was (21.4 ± 2.2), while students who live in villages were in the majority (53.5%), and the majority of students belonged to private institutes (93.9%). (See table 1).

Table 1: Demographic Data of the Participants

Characteristics		Frequency (260)	Percentage
	Male	221	85 %
Gender	Female	39	15 %
Age	Mean age	21.4 ± 2.2	
	Village	139	53.5 %
Living in	City	121	46.5 %
	Private	244	93.8 %
College	Public	16	6.2 %

Figure 1: Academic Performance

Figure 1: Academic performance of the students
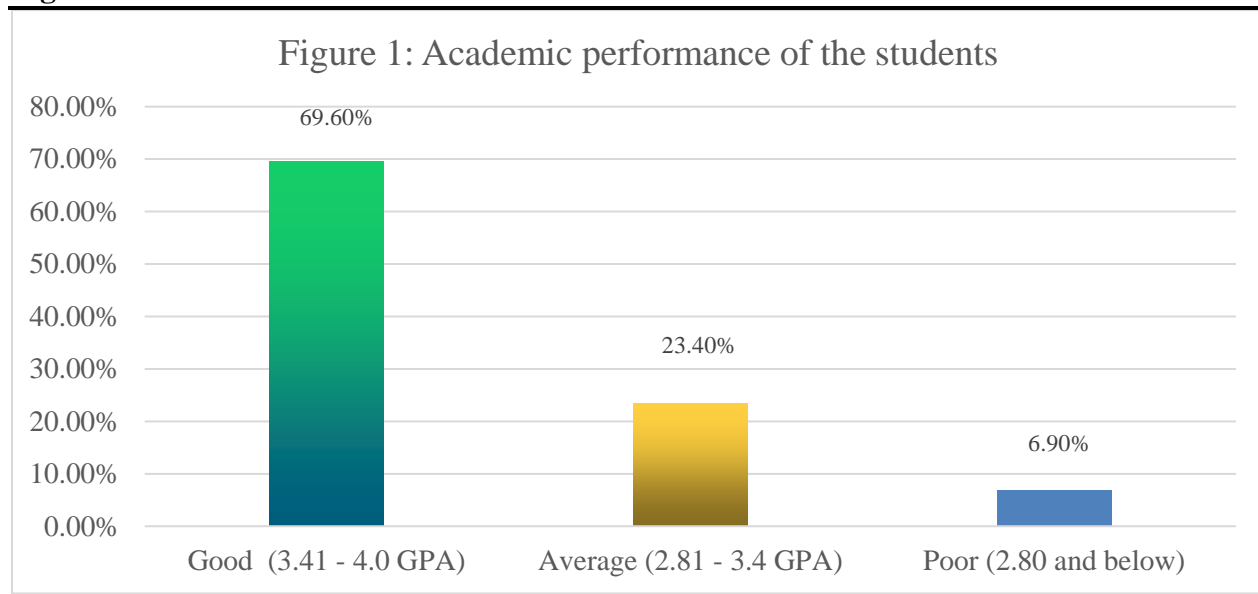
Figure 1 illustrates that majority of the students' academic performance was good (69.6%), followed by average performance students (23.4%), and poor performers was (6.9%).

Table 2: Level of Stress Among the Students

	Stress	Mean score
1	Stress due to taking care of patients	2.16 ± 0.61
2	Stress from lecturer and clinical staff	2.08 ± 0.69
3	Stress due to workload of study	2.44 ± 0.64
4	Stress due to daily life	2.03 ± 0.69
5	Stress from lack of knowledge and skills	2.10 ± 0.83
6	Stress due to environment	2.34 ± 0.68

Table 2 demonstrates that the level of overall stress was moderate, while the factor that increased the level of stress was "stress from assignment and workload," with a mean score of (2.44 ± 0.64), followed by "stress from the environment," with a mean score of (2.34 ± 0.68), and "stress from taking care of patients," with a mean score of (2.16 ± 0.61) are the three domains that were responsible for increasing the level of stress. The remaining factor also contributes to the level of stress among the participants. (See Table 2).

Table 3: Correlation of Stress with Selected Variables

	1	2	3	4
1:Gender	-	.114	-.080	.007
2:Age		-	.307**	-.027
3:Academic performance			-	.104
4: Stress				-

Table 3 reveals that stress is weak association with academic performance and Gender, while negative weak correlation with age.

Discussion

In the current study, the total number of participants was 253, with more males (85%) than females (15%). The average age of the students was (21.4 ± 2.2), with the majority of students living in villages (53.5%) and the majority of students belonging to private institutes (93.8%). In support of the demographics of our study, a study conducted in Pakistan shows that the majority of participants were male (69.9%), and students from private institutes were also higher (96%) than students from public institutes (Sultan et al., 2022). Contrary to our findings, another study reported that females were higher (92.4%) than males (7.6%) (Liu et al., 2022).

In the current study, the overall level of stress among the participants was moderate. "Workload and task" remain the most frequently cited factor, followed by "environmental stress" and "patient care stress as the main factors associated with increased stress among study participants. A study conducted in India shows that overall stress among study participants was moderate, which supports our findings. In addition, the study also concluded that the main factors that are associated with stress are interface concerns and academic workload, access to nursing by other professionals or lack of time, and fear of examination (Nebhinani et al., 2020). A study conducted in Pakistan also supports our finding that most nursing students had moderate levels of stress (Sultan et al., 2022). In a study by Shukla et al. (2012) and Eldeeba et al., the main factor that was responsible for stress was academic workload (Shukla et al., 2013) (Eldeeb et al., 2014). Financial problems and worries about the future were the main stressors that increased the level of stress among students, as reported by a study (Al-Dubai et al., 2011). Another study also reveals that the leading stressors among nursing students are academic lecturers, clinical teachers, and nursing staff in clinical practice. In addition, lecturers in academics, clinical teachers, and nursing staff in clinical practice are leading stressors among nursing students (Baluwa et al., 2021).

In the current study, Pearson's correlation test was used; stress is weak association with academic performance and Gender, with negative weak correlation with age. Our finding is supported by studies that there is a significant correlation between academic and clinical stress with coping strategies through ANNOVA (Yasmin et al., 2018). Another study also demonstrated that coping strategies have a significant association with stress due to post-hoc tests (Jameson, 2014). Liu. et al. (2021) contradict our findings, showing that there is no significant correlation between stress with its domains and upbeat coping style as a result of Pearson's correlation (Liu et al., 2022). A study by Bodys-Cupak et al. (2016) reveals that students who perform clinical duties and suffer from high levels of stress use negative coping strategies such as blaming, resisting, and stopping actions (Bodys-Cupak) et al. 2016. According to the University of Nursing Stress Scale, nursing students worldwide suffer from moderate to high stress (Preto et al., 2018).

Conclusion

According to the study's findings, moderate stress is a problem for undergraduate nursing students. The most often mentioned causes of stress are still "workload and assignments," "stress due to environment," and "stress from taking care of patients." To overcome stress, students utilize coping strategies in the form of problem-solving, stay optimistic, and transference. There is also dire need to provide counselling and coaching facilities for managing the stress.

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