



FACTORS ASSOCIATED WITH ANXIETY AMONG BACHELOR OF SCIENCE IN NURSING (BSN) STUDENTS: AN ANALYTICAL CROSS SECTIONAL STUDY

Sehrish Arshad^{1*}, Fozia Arshad²

^{1*} Assistant Professor, Lahore University of Biological and Applied Sciences (UBAS)
Email: sehrisharshad72@gmail.com, Ph#03362032228

² Nursing Instructor, Services Institute of Medical Sciences (SIMS)
Email: foziaarshad062@gmail.com, Ph#03322698700.

***Corresponding author:** Sehrish Arshad (sehrisharshad72@gmail.com)

ABSTRACT

Background:

Anxiety among students is a growing public health concern, particularly in healthcare disciplines where academic and clinical demands are high. Understanding the relationship between anxiety and influencing factors is essential for early identification and intervention.

Objective:

To identify factors associated with anxiety among Bachelor of Science in Nursing (BSN) students.

Methods:

A quantitative, analytical cross-sectional study was conducted among two hundred BSN students. Data were collected using a structured questionnaire along with the Zung Self-Rating Anxiety Scale to assess anxiety levels. Sociodemographic, academic, clinical factors, and wellbeing variables measured. Pearson correlation was used to assess the relationship between anxiety and independent variables, while multiple regression analysis was applied to identify significant predictors of anxiety among BSN students, P value of (<0.05) considered statistically significant.

Results:

The study found significant relationships between anxiety and the selected factors among BSN students. Pearson correlation analysis showed that anxiety was significantly positively associated with academic factors ($r = 0.62$, $p < 0.001$), clinical factors ($r = 0.58$, $p < 0.001$) and sociodemographic factors ($r = 0.36$, $p = 0.001$), while overall wellbeing was negatively associated with anxiety ($r = -0.52$, $p < 0.001$). Multiple regression analysis revealed that the model was statistically significant ($F(4,128) = 28.75$, $p < 0.001$). Academic factors emerged as the strongest predictor of anxiety, followed by clinical and sociodemographic factors, while overall wellbeing showed a significant negative effect, suggesting that better wellbeing is associated with lower anxiety levels.

Conclusion:

This study concludes that anxiety is a significant concern among BSN students, influenced by academic, clinical, and sociodemographic factors. It highlights the need for supportive **educational** environments and effective mental health strategies to promote students' well-being and academic success.

Keywords: Anxiety, nursing students, academic stress, clinical factors, wellbeing.

INTRODUCTION

Anxiety is one of the most common psychological problems among students, particularly in nursing education where academic, clinical, and emotional demands are high. Nursing students are exposed to multiple stressors which includes heavy coursework, clinical responsibilities, fear of making mistakes, and high expectations from instructors, which significantly contribute to anxiety levels. As a result, anxiety when remains persistent and untreated, not only weakens the students' academic performance and clinical competency but can also lead to long term psychological distress and attrition from the nursing profession (Khan et al., 2021).

Recent study showed that anxiety among nursing students is not only prevalent but also closely related to multiple factors like, sociodemographic variables, academic factors, clinical factors and some personal factors. Additionally, anxiety levels in nursing students are linked with personality traits that how the student perceive anxiety and try to overcome physiological and psychological distress. Moreover, some studies suggest that anxiety levels among nursing students are also associated with learning environment (Mousavi et al., 2024)

Academic related stress is one of the major factors associated with anxiety among nursing students. A recent study found that academic anxiety is significantly associated with cognitive and emotional regulation difficulties, suggesting that students who struggle with managing academic demands are more likely to experience higher anxiety levels. Similarly, test anxiety has been identified as a common issue, where examination pressure and fear of failure significantly influence the students' psychological wellbeing (Khaira et al., 2024). A study conducted in Pakistan reported that nursing students frequently experience classroom anxiety due to challenging coursework, strict evaluation system and unsupportive learning environments. These findings indicate that anxiety is influenced by both global and local educational challenges (Khan et al., 2024)

Clinical training is another critical factor associated with anxiety among nursing students. They often experience stress in clinical environments due to fear of making mistakes, lack of confidence, and unfamiliar hospital environment and shift change especially night shift contribute anxiety among students. Recent study demonstrated that anxiety levels increase during clinical placements, affecting both learning outcomes and clinical performance. These findings highlight that both academic and clinical components of nursing education contribute significantly to anxiety among nursing students (Ahmed et al., 2023).

In addition to academic and clinical factors, personal and psychological variables also play an important role in anxiety levels among nursing students. A recent correlational study confirmed that anxiety levels among nursing students are associated with personality traits and academic performance, indicating that individual differences about the personality traits, influence how students experience and manage the anxiety.

Every student has different type of coping mechanism to manage the anxiety levels, that may be learned by the parents or people from environment and from their personal experiences. Economic issues are the other factor, Students have to pay their fee and pay for residence and transportation causes stress among them (Ibrahim & Elhabashy, 2025). Furthermore, recent evidence suggests that sleep disturbances further contribute to increased anxiety levels among nursing students (Rianti et al., 2024). Students have to complete their assignments before the deadline. They have to complete heavy coursework a night before exams, so students are used to stay awake late at night especially during examination.

On clinical rotation students have to perform night shifts and stay awake, that will decrease their academic performance and effect on their physical and psychological wellbeing. Overall, anxiety among Bachelor of Science in Nursing (BSN) students is a multifactorial issue influenced by academic workload, clinical exposure, personal characteristics, and environmental factors. Despite the recognition of anxiety as a common issue, it often remains unaddressed within nursing institutions, particularly in developing countries where support systems and mental health resources may be limited. Elevated anxiety levels can negatively affect students' academic performance, clinical competence, decision-making ability, and overall psychological well-being. This study will provide

valuable insights into the factors contributing anxiety among BSN students. It will help educators and institutions design strategies to reduce stress and improve the learning environments. Additionally, it will assist students in understanding anxiety triggers and adopting effective coping mechanisms to manage the anxiety levels, ultimately enhancing academic performance and clinical competence.

Objectives

- 1: To assess the levels of anxiety among Bachelor of Science in Nursing (BSN) students.
- 2: To identify socio-demographic, academic, and clinical factors among BSN students.
- 3: To determine the association between these factors and anxiety among BSN students.

MATERIALS AND METHODS

Study Design and Setting:

An analytical cross sectional study design was used to identify the factors associated with anxiety among Bachelor of Science in Nursing (BSN) students. The study was conducted in selected nursing colleges of Lahore, Pakistan. These institutions were chosen for ease of access and availability of BSN students. The target population of the study consisted of BSN students enrolled in different academic years, from all years (1st year, 2nd year, 3rd year and 4th year).

Sample Size:

A non-probability convenience sampling technique was used to select participants from the population, who were readily accessible and willing to take part in the study. This approach was considered appropriate due to feasibility, time constraints, and ease of data collection within the study setting. The sample size was determined using a standard sample size calculation formula for cross-sectional studies, with a 95% confidence level and 5% margin of error. Based on these parameters, the sample size was calculated and total of two hundreds BSN students were included in the study.

Eligibility Criteria:

Students from BSN of all years were included as study participants, who were willing to participate and were available during the data collection period. Students who were not willing to participate, were absent at the time of data collection, or were enrolled in other nursing programs such as Post RN were excluded from the study.

Data Collection Tool:

A structured self-administered questionnaire was used, consisting of five sections:

Section I: Socio-demographic Variables

Section II: Academic Factors

Section III: Clinical Factors

Section IV: Overall wellbeing

Section V: Zung Self-Rating Anxiety Scale

Validity and Reliability:

The questionnaire was reviewed by experts in nursing and research to ensure content validity. Whereas, reliability was ensured through a pilot study conducted on 20 students, which were not included in final sample. The reliability of the instrument was evaluated using Cronbach's alpha coefficient to measure internal consistency. The overall Cronbach's alpha value was found to be ≥ 0.7 , indicating acceptable reliability of the tool. This suggests that the items in the questionnaire were sufficiently consistent in measuring the intended constructs.

Data Collection Procedure:

Permission was obtained from the concerned authorities before collecting the data from different institutions. Participants were clearly informed about the purpose and significance of the research to ensure transparency. Informed consent was obtained from each participant, ensuring their voluntary participation. Data was collected through face-to-face interview not through the phone calls. The questionnaires were then distributed to the study participants and collected after completion within the given time frame. Every participant took almost 10 to 15 minutes to fill the questionnaire.

Statistical Analysis:

Data were analyzed using statistical methods. Descriptive statistics presented in form of frequency, percentage, mean, standard deviation. While for inferential analysis, the Pearson correlation test was applied to examine the relationship between anxiety scores and continuous independent variables. Furthermore, multiple linear regression analysis was conducted to identify significant predictors of anxiety among BSN students. A p-value of ≤ 0.05 was considered statistically significant. The results were presented in the form of tables and charts for clear and effective interpretation.

Ethical Considerations:

Ethical approval for this study was obtained from the relevant institutional authority prior to data collection. All participants were fully informed about the purpose and significance of the research. Informed consent was obtained from each respondent before their inclusion in the study. Participation was entirely voluntary, and respondents were assured that they had the right to withdraw from the study at any stage without any consequences. Strict confidentiality and anonymity of the participants were maintained throughout the research process, and all collected data were used solely for academic and research purposes.

RESULTS

LEVELS OF ANXIETY AMONG BACHELOR OF SCIENCE IN NURSING (BSN) STUDENTS:

Table 1: Anxiety Levels Among BSN Students

Anxiety Levels			
S/N	Categories	Frequency(f)	Percent (%)
1	Normal Range	70	35%
2	Mild to Moderate Anxiety	80	40%
3	Severe Anxiety	30	15%
4	Extreme Anxiety	20	10%

According to Table#1 levels of anxiety among nursing students were reported normal rang 70 (35%) students who reported mild to moderate anxiety were 80 (40%) those reported severe anxiety were 30 (15%) and with extreme anxiety were 20 (10%).

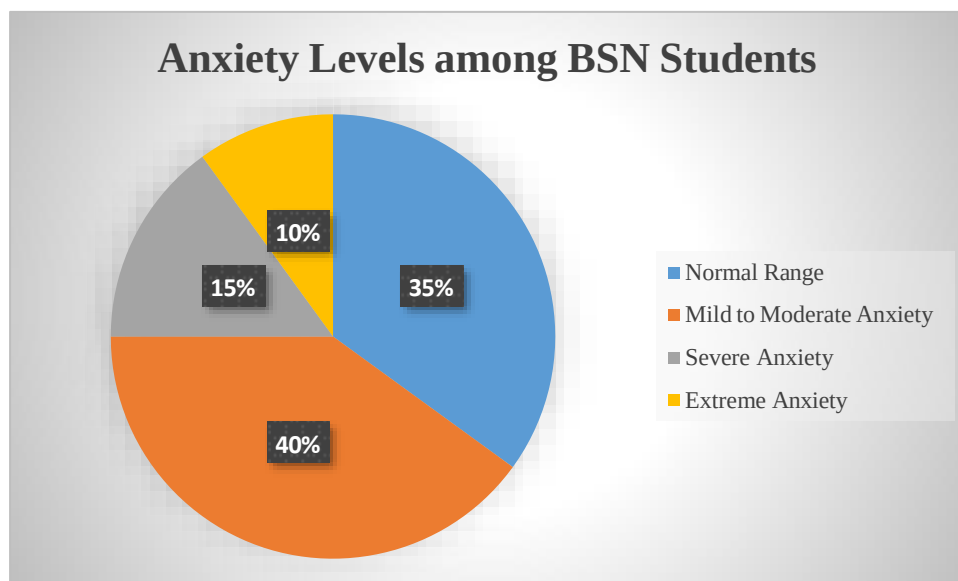


Figure1

FACTORS ASSOCIATED WITH ANXIETY AMONG BACHELOR OF SCIENCE IN NURSING (BSN) STUDENTS:

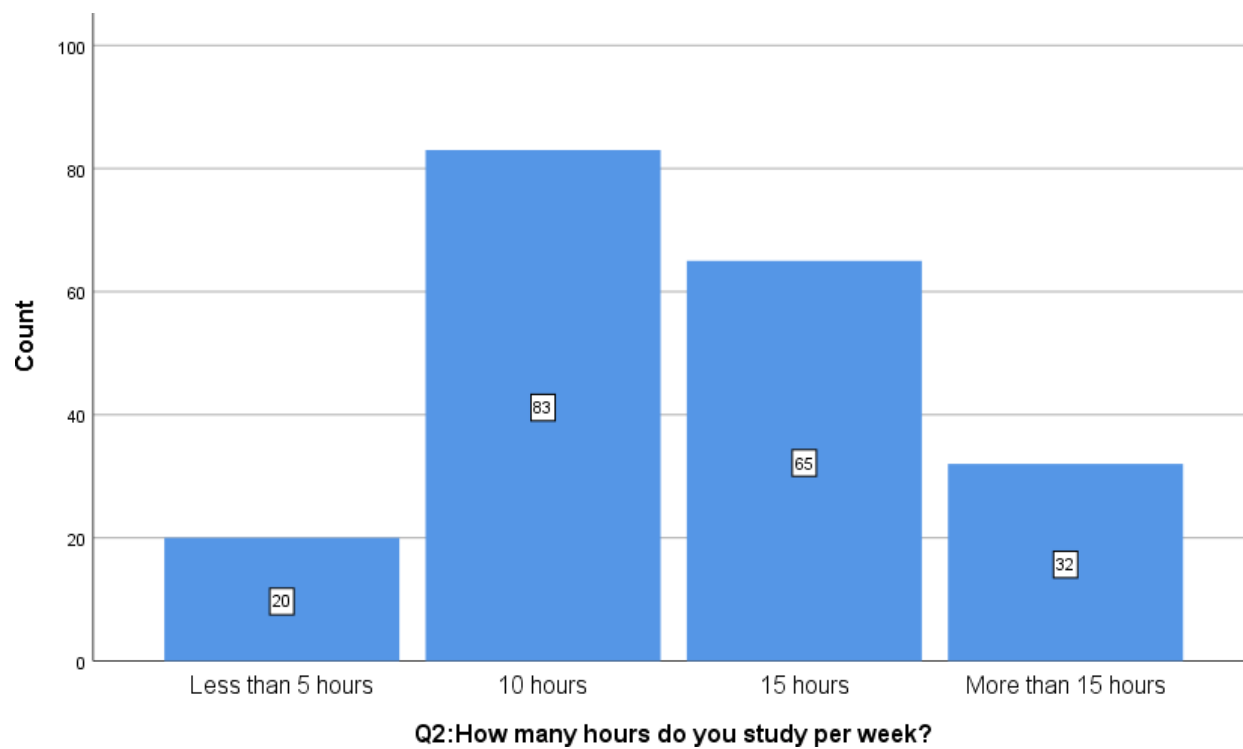
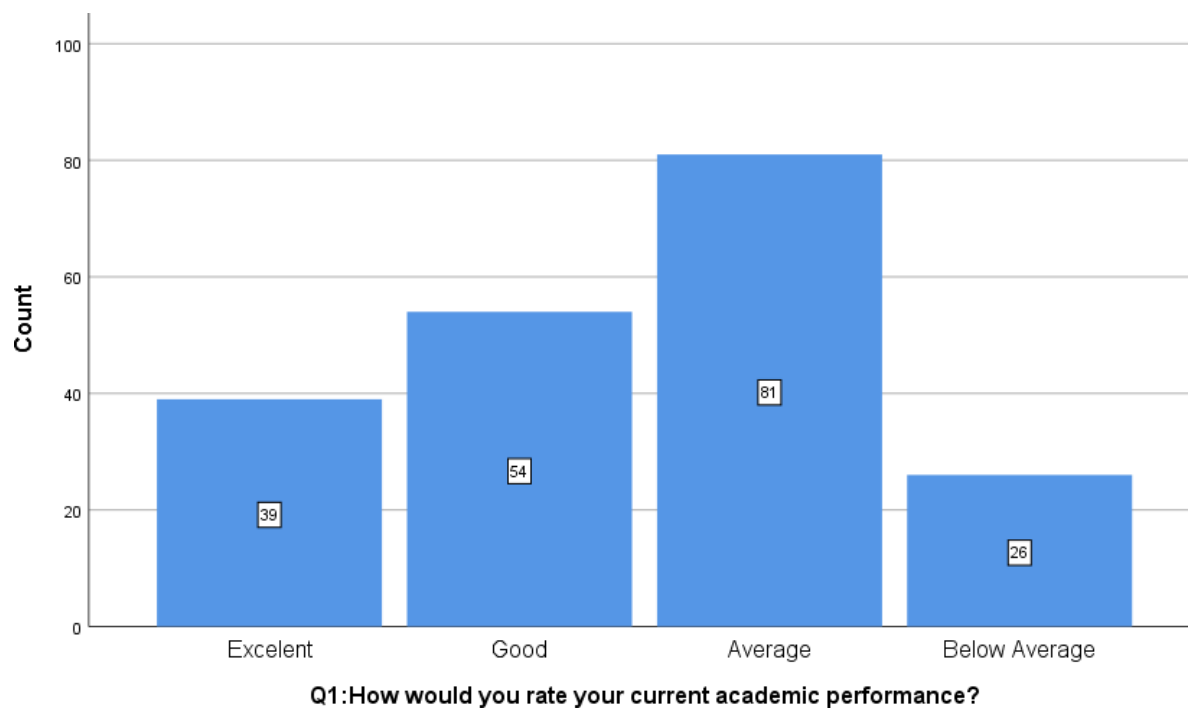
Table 2.1: Sociodemographic Variables

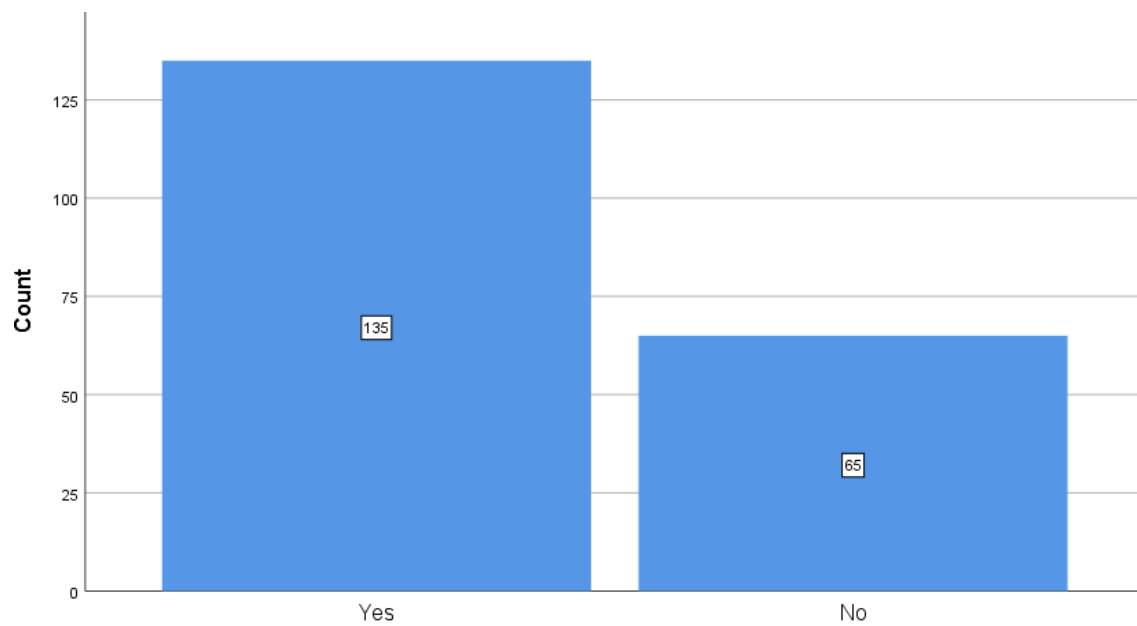
Section I: Sociodemographic Variables			
Variables	Categories	Frequency (f)	Percentage (%age)
Age	<18	82	41.0%
	18-25	103	51.5%
	>25	15	7.5%
Gender	Male	48	24.0%
	Female	152	76%
Year of Study	1st Year	90	45.0%
	2nd Year	61	30.5%
	3rd Year	31	15.5%
	4th year	18	9.0%
Marital Status	Single	173	86.5%
	Married	24	12.0%
	Others	3	1.5%
Family Type	Nuclear Family	61	30.5%
	Joint Family	127	63.5%
	Others	12	6.0%
Socioeconomic Status	Upper Class	23	11.5%
	Middle Class	161	80.5%
	Lower Class	16	8.0 %
Place of Residence	Urban Area	169	84.5%
	Rural Area	31	15.5%

Table # 2.1, presents the sociodemographic characteristics of the participants. Most students were aged 18–25 years (51.5%), followed by those below 18 years (41.0%) and above 25 years (7.5%). The majority of participants were female (76%), while males constituted 24%. In terms of academic year, most students were from 1st year (45.0%), followed by 2nd year (30.5%), 3rd year (15.5%), and 4th year (9.0%). Regarding marital status, the majority were single (86.5%), with a smaller proportion married (12.0%) and others (1.5%). Most participants belonged to joint families (63.5%), while 30.5% were from nuclear families and 6.0% from other family types. In terms of socioeconomic status, the majority were from the middle class (80.5%), followed by upper class (11.5%) and lower class (8.0%). Additionally, most students resided in urban areas (84.5%), whereas 15.5% were from rural areas.

Table 2.2: Academic Factors:

Section – II: Academic Factors				
S/N	Questions	Categories	Frequency(f)	Percentage (%)
1:	How would you rate your current academic performance?	Excellent Good Average Below Average Poor	39 54 81 26	19.5% 27.0% 40.5% 13.0%
2:	How many hours do you study per week?	Less than 5 hours 10 hours 15 hours More than 15 hours	20 83 65 32	10.0% 41.5% 32.5% 16.0%
3:	Have you faced any academic challenges during your nursing program?	Yes No	135 65	67.5% 32.5

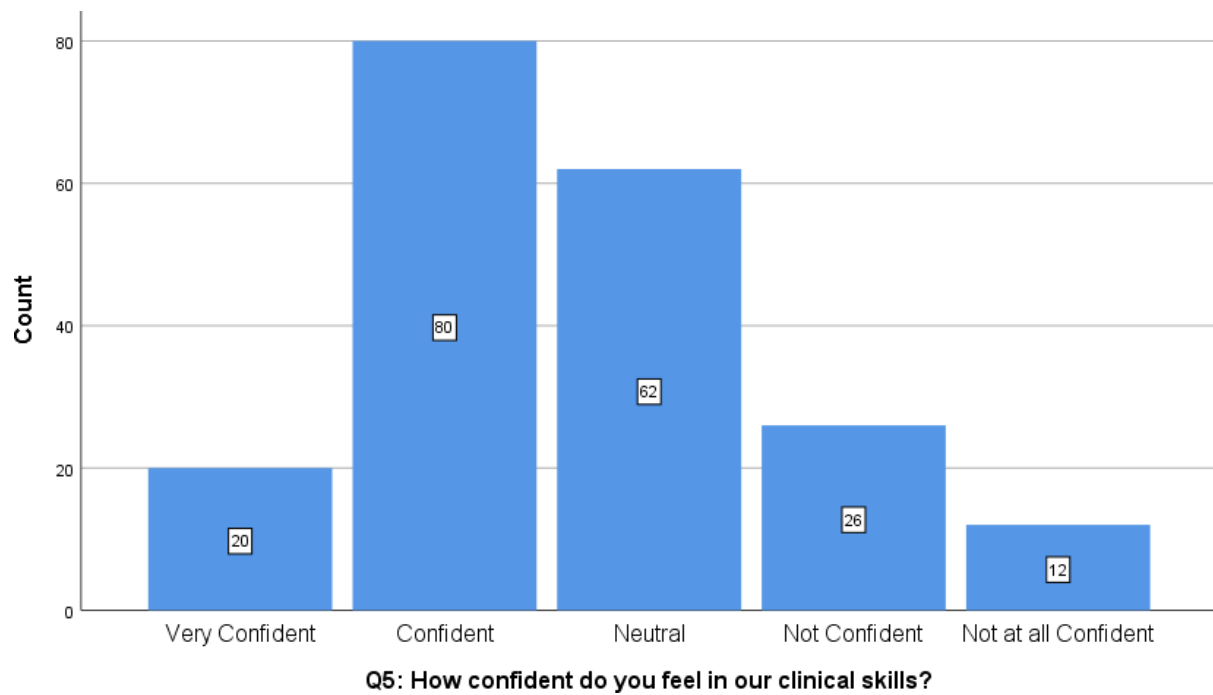
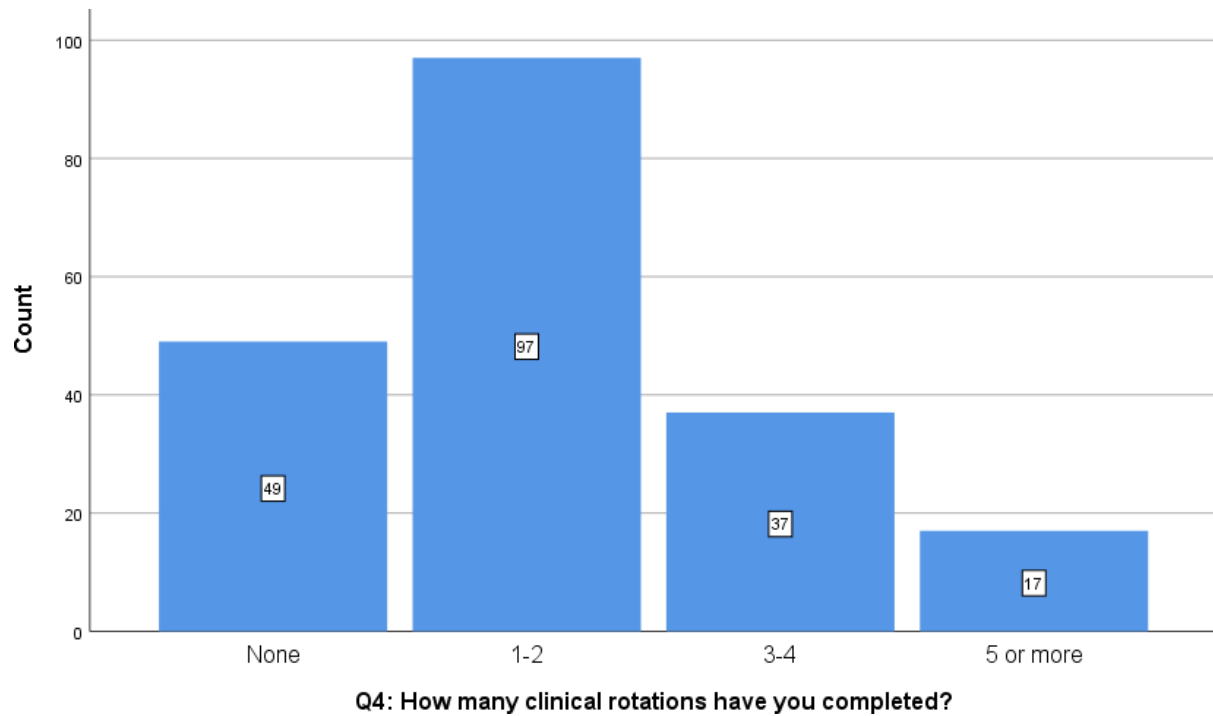


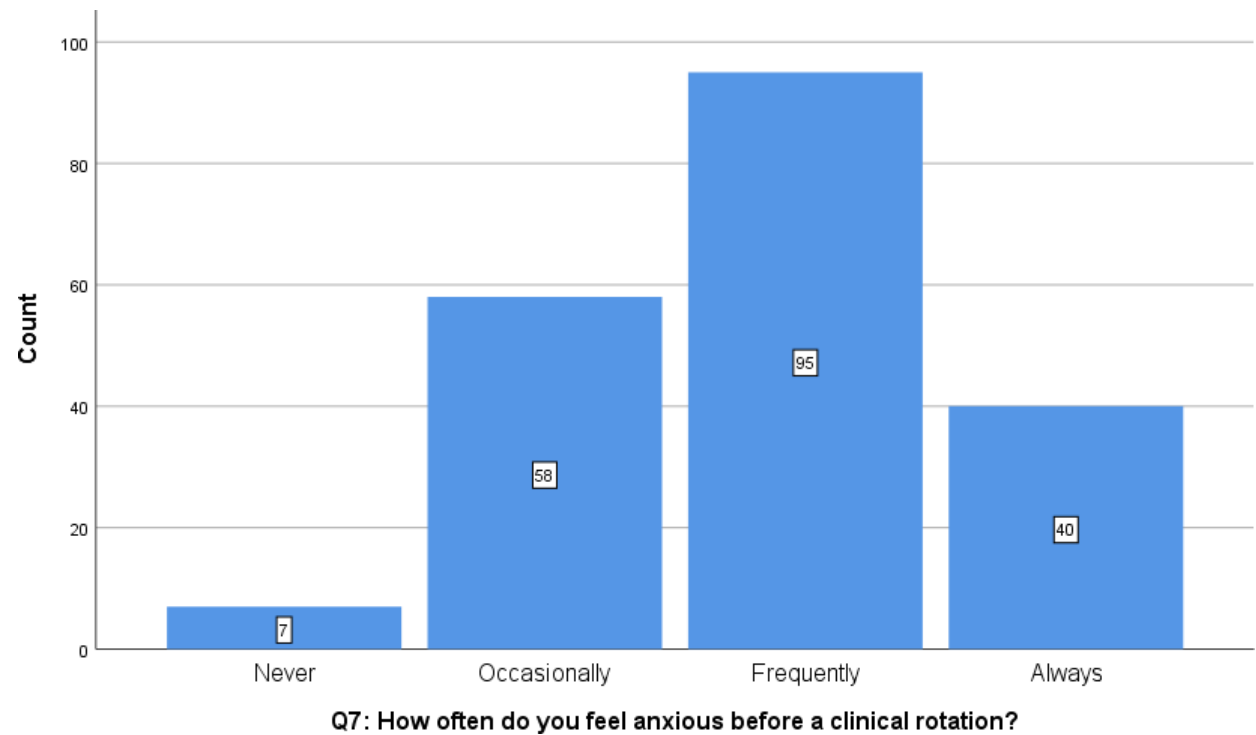
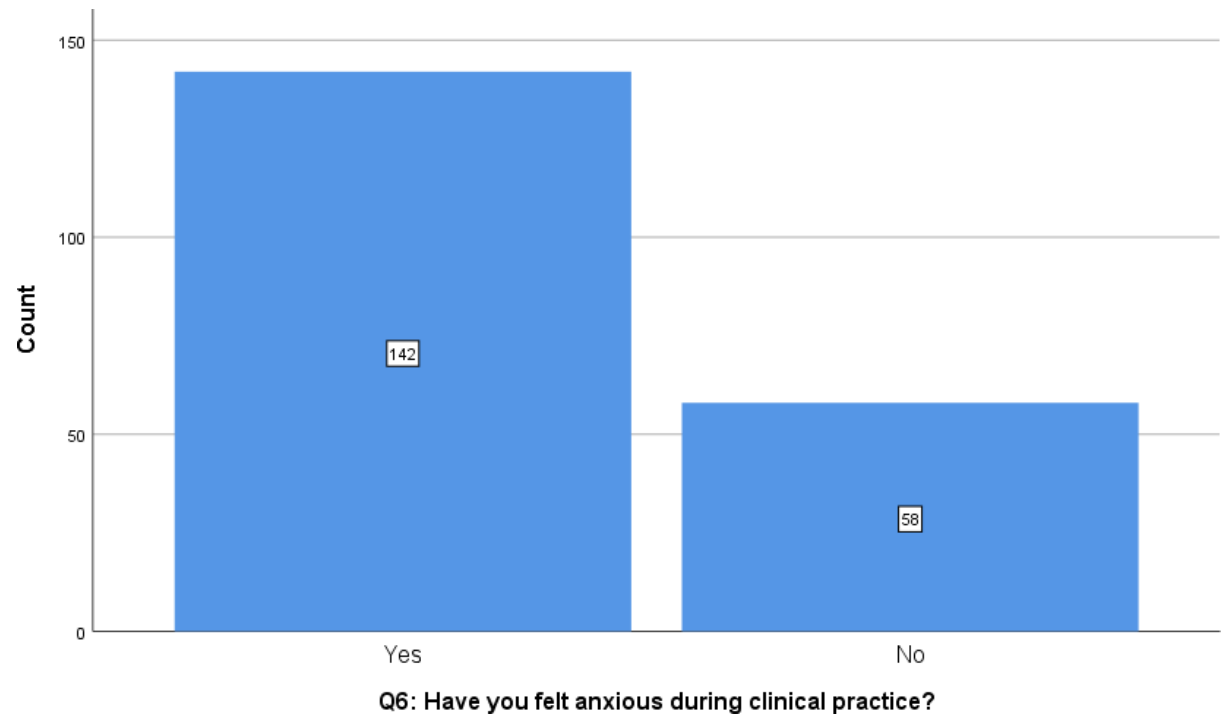


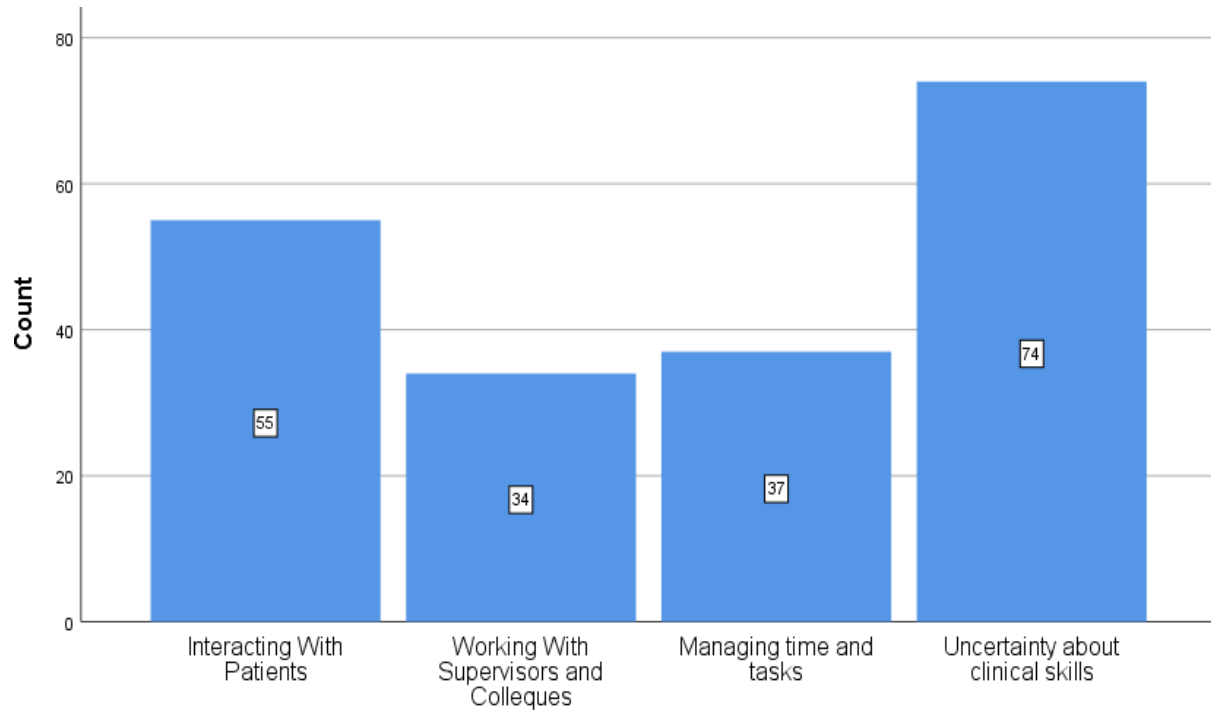
Q3: Have you faced any academic challenges during your nursing program?

Table 2.3: Clinical Factors

Section-III: Clinical Factors				
S/N	Questions	Categories	Frequency(f)	Percentage (%)
4:	How many clinical rotations have you completed?	None	49	24.5%
		1-2	97	48.5%
		3-4	37	18.5%
		5 or more	17	8.5%
5:	How confident do you feel in your clinical skills?	Very Confident	20	10.0%
		Confident	80	40.0%
		Neutral	62	31.0%
		Not Confident	26	13.0%
		Not at All Confident	12	6.0%
6:	Have you felt anxious during clinical practice?	Yes	142	71.0%
		No	58	29.0%
7:	How often do you feel anxious before a clinical rotation?	Never	7	3.5%
		Occasionally	58	29.0%
		Frequently	95	47.5%
		Always	40	20.0%
8:	What aspects of clinical rotations cause you the most anxiety?	Interacting with patients	55	27.5%
		Working with supervisors and colleagues	34	17.0%
		Managing time and tasks	37	18.5%
		Uncertainty about clinical skills	74	37.0%



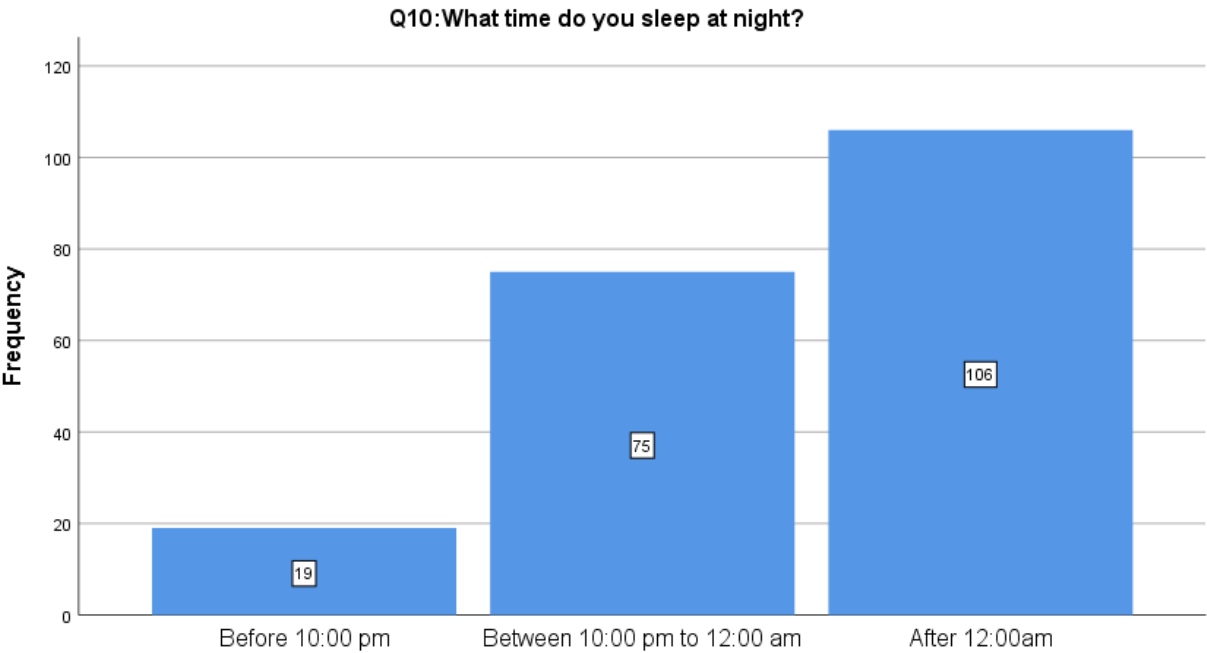
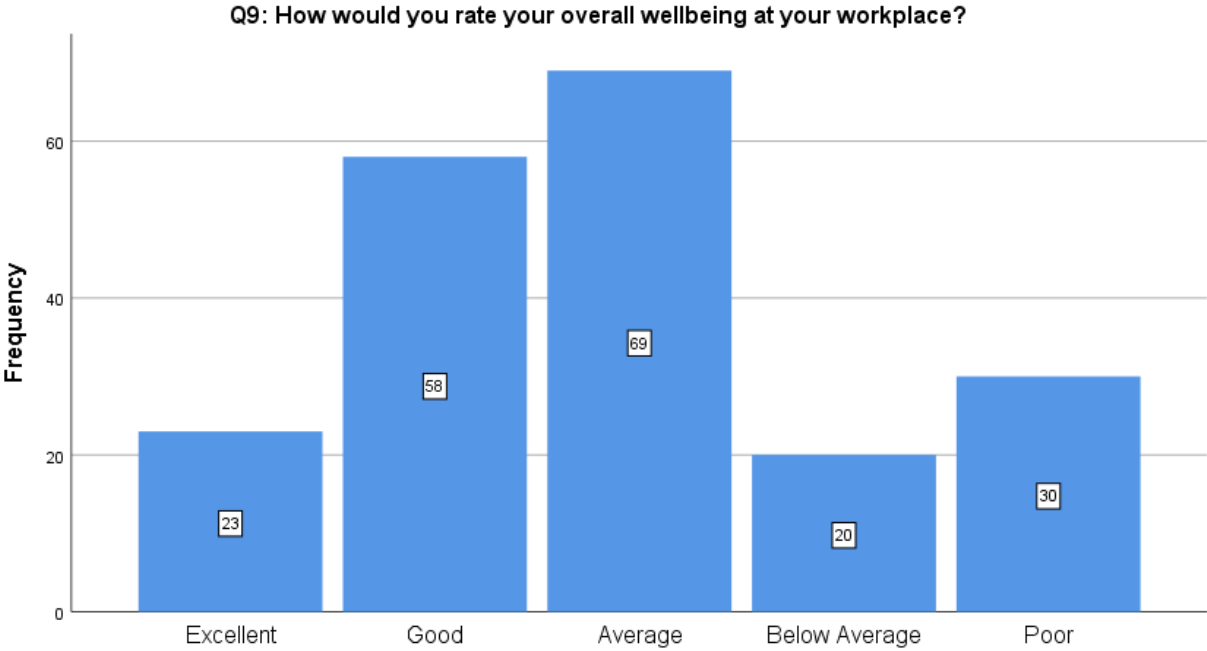




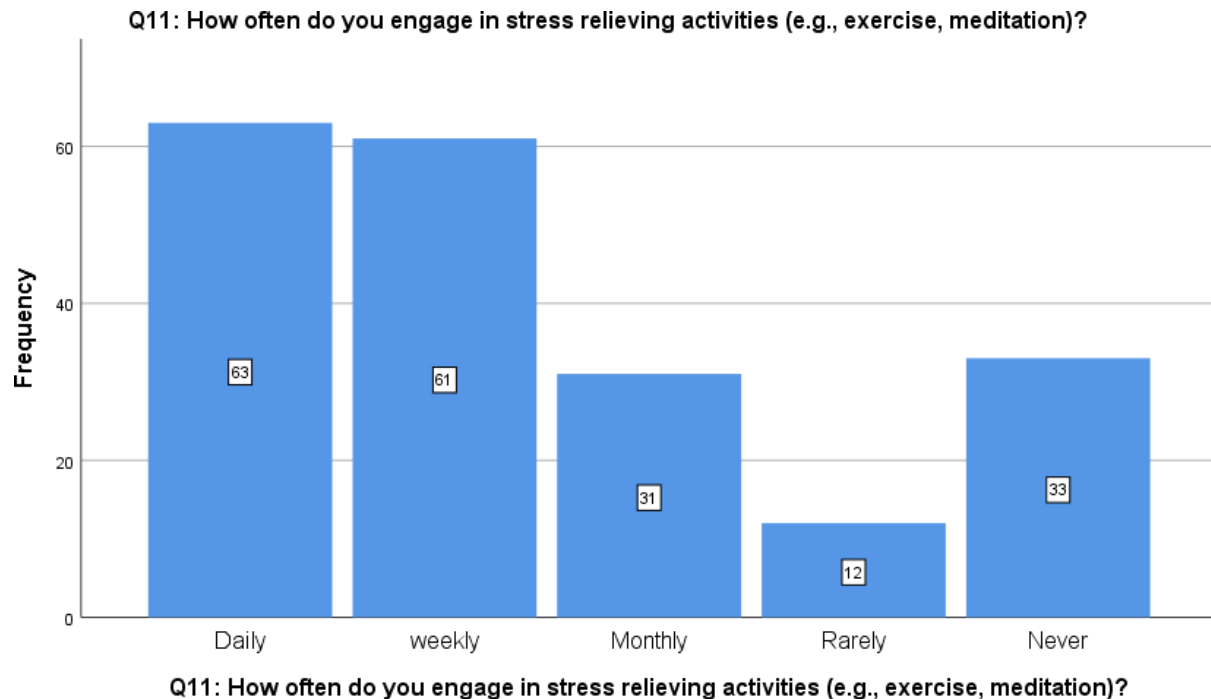
Q8: What aspects of clinical rotations cause you the most anxiety?

Table 2.4: Overall Wellbeing

Section-V: Overall Wellbeing				
S/N	Questions	Categories	Frequency(f)	Percentage (%)
9:	How would you rate your overall well-being at your work place?	Excellent Good Average Below Average Poor	23 58 69 20 30	11.5% 29.0% 34.5% 10.0% 15.0%
10:	What time do you sleep at night?	a) Before 10:00 pm b) Between 10:00 pm to 12:00 am c) After 12:00 am	19 75 106	9.5% 37.5% 53.0%
11:	How often do you engage in stress-relieving activities (e.g., exercise, meditation)?	Daily Weekly Monthly Rarely Never	63 61 31 12 33	31.5% 30.0% 15.5% 6.0% 16.5%



Q10:What time do you sleep at night?



ASSOCIATION BETWEEN ANXIETY AND ITS ASSOCIATED FACTORS AMONG BACHELOR OF SCIENCE IN NURSING (BSN) STUDENTS:

Table 3.1: Correlation

Correlation						
		Zung's mean	Sociodemographic factors	Academic factors	Clinical factors	Wellbeing
Zung's mean	Pearson Correlation	1	0.36	0.62	0.58	-0.52
	Sig. (2- tailed)		0.001	0.000	0.000	0.000
	N	200	200	200	200	200
Sociodemographic factors	Pearson Correlation	0.36	1	0.42	0.38	-0.30
	Sig. (2- tailed)	0.001		0.000	0.000	0.002
	N	200	200	200	200	200
Academic factors	Pearson Correlation	0.62	0.42	1	0.55	-0.48
	Sig. (2- tailed)	0.000	0.000		0.000	0.000
	N	200	200	200	200	200
Clinical factors	Pearson Correlation	0.58	0.38	0.55	1	-0.45
	Sig. (2- tailed)	0.000	0.000	0.000		0.000
	N	200	200	200	200	200
Wellbeing	Pearson Correlation	-0.52	-0.30	-0.48	-0.45	1
	Sig. (2- tailed)	0.000	0.002	0.000	0.000	
	N	200	200	200	200	200

In table 3.1, the Pearson correlation analysis revealed that Zung Anxiety Score had a statistically significant positive relationship with academic factors ($r = 0.62, p < 0.001$) and clinical factors ($r = 0.58, p < 0.001$), indicating that higher academic and clinical stressors are associated with increased anxiety among BSN students. A moderate positive correlation was also observed with sociodemographic factors ($r = 0.36, p = 0.001$). In contrast, overall wellbeing showed a significant negative correlation with anxiety ($r = -0.52, p < 0.001$), suggesting that better wellbeing is associated with lower anxiety levels. All correlations were statistically significant ($P < 0.01$).

Multiple Linear regression Analysis

Table 3.2: Model Summary

Model	R	R square	Adjusted R square	St. Error of estimate	R square Change	F Change	Df1	Df 2	Sig.F change
1	0.71	0.50	0.48	0.39	0.50	28.75	4	128	0.000

Table 3.2 showed the model summary of the multiple regression analysis indicated that the independent variables (sociodemographic factors, academic factors, clinical factors, and overall wellbeing) collectively explained a substantial proportion of variance in anxiety levels among BSN students. The value of $R = 0.71$ shows a strong overall relationship between the predictors and the Zung Anxiety Score. The coefficient of determination ($R^2 = 0.50$) indicates that 50% of the variation in anxiety is explained by the model. The adjusted $R^2 = 0.48$ suggests that the model remains a good fit even after adjusting for the number of predictors, confirming its stability and reliability in explaining anxiety among BSN students.

Table 3.3: Anova

Model		Sum of square	Df	Mean square	F	Sig.
1	Regression	17.96	4	4.49	28.75	0.000
	Residual	17.95	128	0.14		
	Total	35.91	132			

Table 3.3 demonstrated the ANOVA results that the overall regression model was statistically significant ($F(4, 128) = 28.75, p < 0.001$). This indicates that the combination of sociodemographic, academic, clinical factors, and overall wellbeing significantly predicts the level of anxiety among BSN students. The significance of the F-statistic confirms that the model provides a good fit to the data and is effective in explaining variations in anxiety scores.

DISCUSSION

The present study findings are consistent with recent literature indicating that anxiety among BSN students is multifactorial, involving academic, clinical, social, and personal determinants. Nursing students are facing the dual burden of both theoretical learning as well as clinical responsibilities. One of the most prominent contributors identified in different researches is academic pressure. Nursing curricula are widely recognized as intensive, requiring continuous assessment, examinations, and skill acquisition that demonstrated the academic workload and significantly increase anxiety levels among nursing students. Similarly, a study by Ghattas and El-Ashry (2024) found that academic anxiety is strongly associated with delay and poor emotional regulation, contributing stress among nursing students. These findings support the study, where students reported heightened anxiety during exam periods and assignment deadlines.

Additionally, faculty behavior and learning environment has great impact in increasing anxiety among nursing students. Recent studies indicated that non supportive or strict faculty attitudes contribute to classroom anxiety. A lack of constructive feedback and ineffective teaching strategies may further intensify students' fear and hesitation, thereby impairing learning outcomes. Supportive mentorship, on the other hand, demonstrated to reduce anxiety and improve confidence among nursing students (Khan et al., 2024).

Furthermore, clinical training is another contributor to anxiety among nursing students. Nursing students frequently experience anxiety in clinical settings due to fear of making mistakes, dealing with critically ill patients, and lack of confidence in performing the procedures. Recent study demonstrated that clinical placements significantly elevate anxiety levels, particularly among junior students with limited exposure. This aligns with earlier findings that clinical environments involved different psychological and organizational stressors affecting student wellbeing (Seshabela & Shakwane, 2024).

Moreover, socio-demographic and personal factors significantly influence anxiety levels. A recent systematic review (2024) identified factors such as financial stress, family expectations, social isolation, and peer relationships are the contributors to psychological distress among nursing students. In private institutions students have to pay their fee, hostel dues, transport expenses, that may lead to anxiety among students. Other variables, like gender, age, and living conditions have also been associated with variations in anxiety levels, with female students often reporting higher anxiety due to hormonal changes, societal and emotional pressures (Xu et al., 2026).

Similarly, psychological and behavioral factors such as low self-confidence, poor coping mechanisms play a significant role in increasing anxiety among nursing students. A cross-sectional study demonstrated that social anxiety negatively affects interpersonal relationships and overall well-being among nursing students. It may targeted psychological interventions to behave normally and cope with the situation. It is the necessity that academic institutions must have wellbeing centers, where a psychologist must assess the anxiety levels of students, whether due to examination or ineffective coping mechanism and should provide proper intervention according to the symptoms. Most of students don't know they have anxiety not get properly checked by psychologist to take proper intervention (Jia & Yue, 2025).

Whereas, sleep deprivation is widely recognized as a major contributor to anxiety, particularly among students and healthcare trainees. Nursing students often experience irregular sleep due to academic workload, clinical duties, and stress, which significantly impacts their mental health. According to a systematic review, sleep deprivation is strongly linked with increased risk of mental health problems, including anxiety, cognitive impairment, and emotional instability. The review further highlighted that lifestyle factors, academic stress, and disrupted circadian rhythms contribute to poor sleep patterns among nursing students (Mancia et al., 2013).

Lastly, external stressors such as pandemics, risk of infection, and uncertainty about future careers have also been reported as significant contributors. Moreover, due to unpredictable changes in weather, exertion, poor diet, poor sleep student may get infections most commonly respiratory tract infections that may affect their health and impair the academic performance of students (Çürük et al., 2023).

Strengths

This study has several strengths that enhance its value and applicability. The analytical design is appropriate for identifying relationships between anxiety and multiple influencing factors such as academic, clinical, and sociodemographic variables. It provides locally generated data, which increases its relevance for nursing institutions in Pakistan. The inclusion of multiple factors offers a comprehensive understanding of anxiety among students. The use of a standardized instrument, such as the Zung Anxiety Scale, enhances the validity and reliability of the findings. Additionally, the results are practically useful for developing evidence-based strategies aimed at reducing anxiety among nursing students.

Limitations

Despite these strengths, the study has certain limitations. Being a cross-sectional design, it does not allow the establishment of causal relationships between variables. The study is limited to selected colleges in Lahore, which reduces the generalizability of the findings to other regions. The reliance on self-reported data may introduce response bias. Furthermore, data were collected at a single point in time, which may not capture variations across different academic semesters or years. A relatively small sample size may also limit the statistical power of the study.

Recommendations

Based on the findings, several recommendations are proposed. Nursing curricula should include stress management and coping strategies to help students manage anxiety effectively. Academic schedules should be improved to reduce excessive workload pressure. Clinical training should be supported with proper supervision and simulation-based learning to minimize stress. Additionally, institutions should establish counseling and mental health support services for students. Peer support and mentorship programs should be encouraged to enhance emotional support. Future research should adopt a longitudinal design, include larger and more diverse samples from multiple cities, and explore additional psychological and socioeconomic variables. Moreover, Students should also be encouraged to adopt healthy coping strategies to manage stress effectively.

CONCLUSION

This study concludes that anxiety among Bachelor of Science in Nursing (BSN) students in Lahore is a significant and multifactorial issue, strongly associated with academic pressure, clinical demands and socio-demographic factors. The findings highlight that increased workload, fear of making mistakes in clinical settings, and inadequate coping mechanisms contribute substantially to higher anxiety levels among BSN students. The statistically significant relationships observed indicate that these factors cannot be ignored, as they directly impact students' academic performance, clinical competence, and overall well-being. Furthermore, the study emphasizes the need for a supportive educational and clinical environment, as unmanaged anxiety may lead to impaired learning, psychological distress and compromised patient care in the future. Overall, addressing anxiety through structured interventions, improved academic planning, and mental health support is essential to enhance both the educational experience and professional development of students.

Conflict of interest

The authors declared no conflict of interest.

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