

Multidisciplinary Surgical Research Annals<https://msra.online/index.php/Journal/about>

Volume 3, Issue 2 (2025)

Prevalence and Correlates of Depression, Anxiety, and Stress among BSN Students in Karachi, PakistanVijash Kumar¹, Nusrat Jackoleen Kashif², Hafiz Imran Nawaz³

Article Details

ABSTRACT

Keywords: Depression, Anxiety, Stress, BSN Students, Psychological distress

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Undergraduate nursing students are highly liable to mental health challenges due to the rigorous demands of their academic and clinical training. This study investigated the prevalence of depression, anxiety, and stress among Bachelor of Science in Nursing (BSN) students in Karachi, Pakistan, and explored potential associations with demographic factors. A descriptive cross-sectional design was employed, with data collected from 110 BSN students from 2 public sector universities of Karachi, employing the validated Depression, Anxiety, and Stress Scale (DASS-21). Purposive sampling was used and data were analyzed employing SPSS version 24, incorporating descriptive and inferential statistics (chi-square tests). The results revealed that 26% of participants exhibited depressive symptoms (16% mild, 10% moderate), 50% reported anxiety (10% mild, 30% moderate, 10% severe), and 16.7% experienced stress (all mild). No significant association was found between demographic variables (e.g., age, gender, academic performance) and psychological distress. The findings underscore the high prevalence of anxiety and depression among nursing students, highlighting the urgent need for institutional mental health support systems. Recommendations include integrating psychological counseling, stress management workshops, and mental health education into nursing curricula to mitigate these challenges and promote student well-being.

Introduction

Mental health disorders, particularly depression, anxiety, and stress, are increasingly recognized as significant public health concerns, especially among university students [1]. Nursing students, in particular, face unique challenges due to the rigorous demands of their academic and clinical training. The transition into professional nursing education often involves high levels of stress, which can lead to psychological distress if not adequately managed [2].

Depression is one of the most common mental health disorders, severely affecting an individual's quality of life and productivity [3]. Anxiety and stress are also prevalent among nursing students, often exacerbated by the pressures of clinical practice and academic performance [4]. Despite the growing awareness of these issues, mental health problems among nursing students frequently go unnoticed, leading to long-term consequences for their well-being and professional competence.

Suicide, anxiety, and depression symptoms have all been linked to existential issues. Routledge contended that, contrary to popular belief, inadequate mental health care is not the cause of the rising suicide rate in the United States. According to him, the rise in suicides is an existential crisis brought on by recent changes in American society, raising concerns about the meaning of life in general and the possibility that it lacks a basic purpose in particular given the growth of materialism and secularization. According to existential philosopher Albert Camus, suicide signifies a declaration that life has no purpose or worth [5].

Camus also maintained that impulsivity, irrationality, and mental disease are not the only causes of suicide. Rather, he reinterpreted it as the culmination of the conflict between the seeming meaninglessness of life and the desire to live a life of enormous, ultimate, and overarching meaning and purpose [6].

It is commonly acknowledged that high academic demands, unfavorable learning conditions, and an inability to handle stressful situations in clinical practice put medical students at risk for depression. Additionally, medical students are more vulnerable to depression due to a number of social life indicators, physical health, a history of psychological illness, and financial problems [7].

Numerous factors, including age, gender, physical health, social support, conflicts with teachers, personal events, finances, education, sleep, diet, socioeconomic status, family history, and emotional abuse, have been linked in studies to increased odds of depression among medical students [8].

Major depressive disorder was shown to be more prevalent among medical students in Canada who did not receive enough social support from friends and family, according to a descriptive cross-sectional study [9].

Factors such as being female, older, having a personal chronic illness, having relatives with psychiatric disorders, not exercising, having a negative opinion of medical school, having unsatisfactory friendships with classmates, and worrying about not measuring up to the

profession were found to be linked to an increased risk of depressive symptoms in a multicenter cross-sectional study that was conducted in 12 Italian medical schools [10].

In a similar vein, a cross-sectional study conducted among 1103 medical students at a middle-sized German university discovered that talking to peers about concerns and spending time with friends, family, hobbies, and exercise were key characteristics linked to fewer depressed symptoms. However, neuroticism, poor emotional support, eating irregular meals, using drugs or medication to relax, and mental stress were the most significant predictors of depressive symptoms.

Stress can be described as a response or reaction that the body has to any demand. In this case, it is considered as a stimulus that initiates the response of releasing adrenocorticotrophic hormones (ACTH), adrenal hormones, and glucocorticoids along with powerful markers of the sympathetic nervous system. In this manuscript, stress results from academic demands, henceforth termed as academic stress. Academic-related stress occurs when expectations or demands overlap or exceed the coping abilities of a student [11].

Some studies suggested that stress can impact the immune system, haemopoietic system and endocrine systems. While psychological impacts of the changes such as changes in social perception and emotional perception of

self-existence have often been attended to, exposure to examination period stress have also shown to affect psychologically and on other stress coping systems (response systems). Along with other symptoms of the aforementioned condition, researchers focused on within ami-level changes such as lack of energy, raised blood pressure, and other parameters measured were felt [12]. When looking at chronic stress reaction symptoms, it becomes clear why stress would be present, since an imbalance of hormones is highly likely to occur. This is due to stress being accompanied by elevated levels or prolonged exposure or spillover of the stressed system's functional control range. Stressed activation leads to anxiety, which is often confused with hyperactive state of persistent nagging thoughts, worry and panic attacks where physical symptoms like insomnia and palpitation can become progressive.

This study aimed to investigate the prevalence of depression, anxiety, and stress among BSN students in Karachi, Pakistan, and to explore the relationship between demographic factors and psychological distress. The findings of this study will contribute to the growing body of literature on mental health among nursing students and inform interventions to support their well-being.

Research Objectives

1. To assess the prevalence of depression, anxiety, and stress using the DASS-21 scale among BSN students in Karachi.
2. To analyze the association between demographic variables and psychological distress levels.
3. To propose institutional strategies to mitigate mental health issues among nursing students.

Research Questions

1. What is the prevalence of depression, anxiety, and stress among BSN students in Karachi, Pakistan?
2. How do demographic factors relate to depression, anxiety, and stress levels in BSN students?
3. What interventions can be recommended to address mental health challenges among nursing students based on the study findings?

Methodology

A descriptive cross-sectional study with a quantitative approach was conducted to examine the prevalence of depression, anxiety, and stress among undergraduate BSN students in Karachi, Pakistan.

Study Population & Sampling

The study was carried out at 2 public sector universities in Karachi. The participants were BSN Generic students of 4th semesters, including both male and female students.

A total sample size of 110 students was selected using a purposive sampling technique, ensuring the inclusion of students from different academic years.

Data Collection & Instrument

The DASS-21 (Depression, Anxiety, and Stress Scale-21), a validated and open-access questionnaire, was used to assess the mental health status of the participants. The questionnaire was self-administered, ensuring confidentiality to encourage honest responses.

Data Analysis

- The collected data was analyzed using SPSS version 24.
- Descriptive Statistics: Frequencies and percentages were calculated for qualitative variables.
- Inferential Statistics: A chi-square test was applied to determine the association between demographic factors and levels of depression, anxiety, and stress among students.

Results

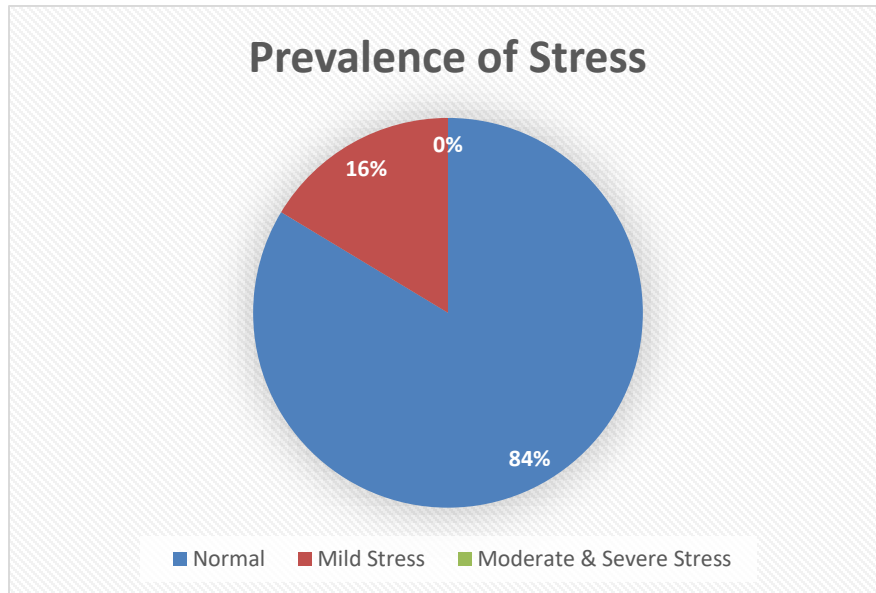
- The study found that 26% of students exhibited symptoms of depression, with 16% categorized as mild and 10% as moderate.
 - The prevalence of anxiety was 50%, with 10% experiencing mild symptoms, 30% moderate, and 10% severe anxiety.
 - Additionally, 16.7% of students showed signs of stress, all categorized as mild.
- There was no significant association between demographic factors and depression, anxiety, or stress.

Table 1: Sociodemographic Variables

Variables	Frequency	(%)
Gender		
Male	66	60
Female	44	40
Age		
18-23	99	90
24-29	11	10
Year of Study		
1st Year	29	26.7
2nd Year	15	13.3
3rd Year	22	20.0
4th Year	44	40.0
Academic Failure		
Yes	37	33.3
No	73	66.7
Religion		
Muslim	79	72
Christian	81	73.3
Hindu	15	13.3
GPA of Last Semester		
2.5-2.9	11	10.0
3.0-3.5	73	66.7
3.6-4.0	26	23.3
Smoking Status		
Yes	11	10.0
No	99	90.0
Residency		
With Family	70	63.3
With Relatives	7	6.7

Variables	Frequency	(%)
Hostel	33	30.0

Table: 2



Stress is a psychological and physiological response to challenges that exceed an individual's coping capacity. The prevalence of stress refers to the proportion of students experiencing mild to moderate stress, which can impact their academic performance and mental well-being.

The prevalence of stress pie chart highlights how stress impacts nursing students. Stress is categorized into two levels:

Normal (83.3%) – 92 students

1. This majority portion represents students who effectively **cope with academic workload**, demonstrating resilience against stress triggers.
2. These students likely **practice healthy habits** such as time management, relaxation techniques, and balanced lifestyles.

Mild Stress (16.7%) – 18 students

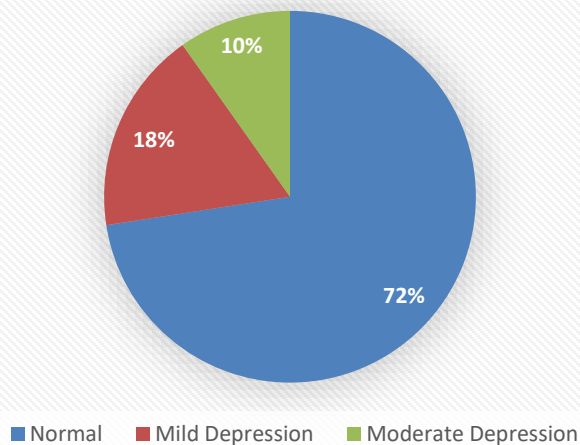
1. These students have trouble **managing workload** and may feel overwhelmed during exams or assignments.
2. **Structured stress-relief programs**, such as relaxation exercises and academic counseling, could improve their well-being.

Interpretation

While stress prevalence is lower compared to depression and anxiety, even mild stress can escalate into severe burnout if left unmanaged. Universities should monitor stress levels among students and integrate coping strategies within the curriculum.

Table: 3

Prevalence of Depression



Depression is a mental health disorder characterized by persistent feelings of sadness, loss of interest, and decreased motivation. In this study, the prevalence of depression refers to the percentage of BSN students who exhibit symptoms of mild, moderate, or severe depression as assessed using the DASS-21 questionnaire.

The pie chart illustrates the prevalence of depression among BSN students showcases how students experience varying levels of depressive symptoms. Depression in this study is categorized into three groups:

Normal (74%) – 81 students:

1. This portion of the pie chart represents students who do not exhibit significant depressive symptoms.
2. These individuals maintain stable emotional well-being and can effectively manage academic stress.

Mild Depression (16%) – 18 students:

1. These students experience temporary emotional disturbances such as low mood, lack of motivation, and fatigue, but not severe enough to impair their daily functions.
2. Early interventions, such as counseling and mental health workshops, could help prevent progression to moderate depression.

Moderate Depression (10%) – 11 students:

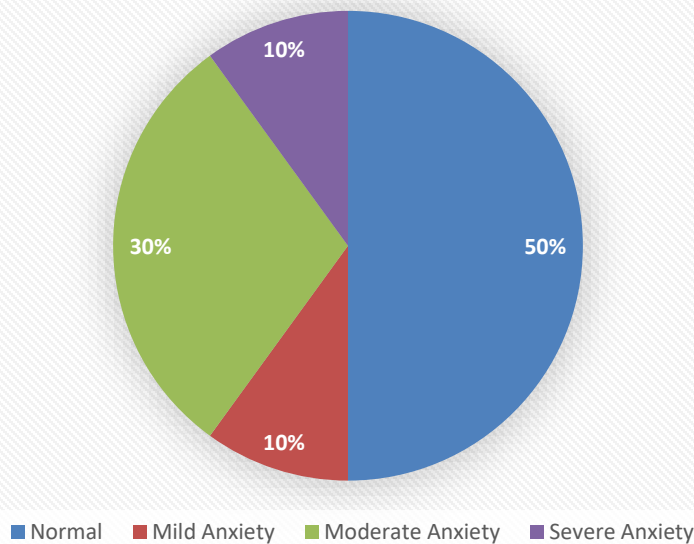
1. These students struggle with persistent sadness, feelings of worthlessness, and lack of concentration, affecting their academic performance and interpersonal relationships.
2. This level of depression necessitates professional psychological assistance to prevent worsening symptoms.

Interpretation:

The depression pie chart reflects that 26% of students experience depressive symptoms, highlighting the importance of mental health support systems in nursing education.

Table: 4

Prevalence Of Anxiety



Anxiety is characterized by **excessive worry, restlessness, and physical symptoms like rapid heartbeat and sweating**. The prevalence of anxiety in this study refers to the **percentage of students who experience mild, moderate, or severe anxiety** based on self-reported responses to the DASS-21 tool.

The **anxiety prevalence** pie chart represents the distribution of students experiencing different levels of anxiety. Anxiety is categorized into four groups:

Normal (50%) – 55 students:

1. These students do not suffer from excessive worry or fear and demonstrate **healthy coping mechanisms** under stressful academic conditions.
2. This portion of the chart represents individuals who can **effectively manage challenges without heightened emotional distress**.

Mild Anxiety (10%) – 11 students:

1. These students experience **mild nervousness and worry**, primarily during academic pressures such as exams, clinical rotations, and assignments.
2. While not severe, **routine stress-management strategies** would be beneficial to prevent escalation.

Moderate Anxiety (30%) – 33 students:

1. These students demonstrate **persistent worry, racing thoughts, and difficulty concentrating**, which could impair academic performance.
2. This level of anxiety requires **structured intervention** like counseling and relaxation techniques.

Severe Anxiety (10%) – 11 students:

1. These students **struggle with debilitating anxiety**, leading to symptoms such as **panic attacks, extreme restlessness, and avoidance behaviors**.
2. **Immediate psychological support** is necessary for this group to prevent long-term effects on academic success and personal health.

Interpretation:

With **50% of students experiencing anxiety**, this pie chart emphasizes the urgent need for **student mental health resources and support programs** within nursing institutions.

Overall Analysis

- **Anxiety prevalence (50%)** is the **highest**, suggesting that nursing students struggle significantly with **chronic worry and nervousness**.
- **Depression prevalence (26%)** indicates that emotional distress is **fairly common** but not as high as anxiety.
- **Stress prevalence (16.7%)** is **relatively lower**, meaning that **most students can manage academic pressure**, but some still struggle.

Conclusion

The findings of this study indicate that BSN students experience significant levels of depression, anxiety, and stress. The prevalence rates in the expanded sample show that 26% of students exhibit symptoms of depression, with 16% experiencing mild depression and 10% moderate depression. Similarly, 50% of students display anxiety symptoms, including 10% mild, 30% moderate, and 10% severe anxiety. Additionally, 16.7% of students experience mild stress. These results emphasize the psychological burden faced by nursing students and the need for proactive measures to support their mental well-being.

Recommendations

Recommendations for Addressing Mental Health Challenges among BSN Students

Given the high prevalence of depression (26%), anxiety (50%), and stress (16.7%) among BSN students in Karachi, Pakistan, targeted interventions are urgently needed to safeguard their psychological well-being. The following evidence-based recommendations are proposed to mitigate these mental health challenges and create a supportive academic environment.

- **Psychological Support Services**
To address the significant levels of depression and anxiety, universities should establish dedicated mental health support programs. These could include on-campus counseling services staffed by licensed psychologists, as well as peer support groups where students can share experiences in a safe, non-judgmental setting. Such initiatives would provide immediate relief for students experiencing mild to severe symptoms while reducing the stigma associated with seeking help.
- **Stress Management Workshops**
Regular workshops focusing on stress coping strategies, resilience-building, and time management techniques should be implemented. These sessions could teach practical skills such as mindfulness meditation, cognitive-behavioral techniques, and relaxation exercises. By equipping students with effective tools to manage academic and clinical pressures, institutions can prevent stress from escalating into more severe mental health issues.
- **Integration of Mental Health Education**
Nursing curricula should incorporate mandatory modules on mental well-being, self-care strategies, and stress mitigation techniques. Topics could include recognizing early signs of burnout, maintaining work-life balance, and accessing mental health resources. Integrating this content early in the program would help students develop lifelong coping mechanisms essential for their personal and professional lives.
- **Faculty Engagement**
Academic staff play a critical role in identifying and supporting distressed students. Training programs should be provided to help faculty recognize early warning signs of psychological distress, such as declining academic performance or social withdrawal. Faculty should also be equipped with referral protocols to connect students with appropriate mental health services when needed.
- **Student-Led Initiatives**
Encouraging student-led mental health awareness campaigns can help normalize conversations about emotional well-being. Activities such as mental health seminars, wellness fairs, and peer mentoring

programs would foster a culture of openness and mutual support. Student representatives could collaborate with university administration to ensure these initiatives align with institutional goals.

- **Flexible Learning Approaches**

To reduce academic pressure, institutions should consider implementing flexible learning approaches, such as adjustable deadlines, hybrid learning options, and workload assessments. These measures would allow students to balance their academic responsibilities with self-care, particularly during high-stress periods like exams or clinical rotations.

- **Regular Screening Programs**

Annual mental health screenings using validated tools like the DASS-21 should be introduced to monitor student well-being systematically. These checkups would enable early identification of at-risk students and facilitate timely interventions, such as counseling or academic adjustments, to prevent worsening symptoms.

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