Research Article

Depression, Anxiety and Stress among Undergraduate Students

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Abstract

Introduction: Mental health among university students is a significant public health concern, with 792 million people living with a mental health disorder in 2017. Asian students often experience high depression rates, while physical therapy students face academic-related stress. This study aims to evaluate depression, anxiety, and stress prevalence among university students using the DASS and explore demographic and contextual factors.

Methods: A cross-sectional study recruited 200 students from Jamia Hamdard, Delhi, in three academic courses (pharmacy and physiotherapy) for a study on depression and anxiety. Data collection involved self-administered questionnaires and the Depression Anxiety Stress Scale-21 (DASS-21). The study used a two-section questionnaire to collect information on socio-demographic, academic, and medical data, and categorized SAD levels into "normal", "mild", "moderate", "severe", and "extremely severe" levels.

Data analysis: Descriptive analysis was done.

Result: The study found that 66% of participants had normal depression levels, while 34% had varying levels, with 12% experiencing extremely severe depression. A significant proportion of participants experienced anxiety symptoms, with 19.6% experiencing extremely severe anxiety. The majority had normal stress levels, with 40.2% reporting elevated levels.

Conclusion: Undergraduate student's depression, anxiety and stress levels highlight the affected structured mental health which could be due to multiple reasons. Therefore, it is concluded that prevalence rate of anxiety and stress is on higher side whereas depression is affecting mildly.

Keywords: Students; Depression; Anxiety; Stress; DASS; Undergraduates

Introduction

Depression, anxiety and stress are considered crucial indicators for mental health in the community, in general, and among university students in particular [1]. Globally, mental health among undergraduate students is a significant public health concern. University students encounter substantial academic and familial pressures, leading to notable psychological stress that can result in severe mental health challenges, such as depression and anxiety [2]. A study estimated that 792 million people in 2017 lived with a mental health disorder which was slightly more than 1 in 10 people globally (10.7%).

Recent meta-analyses reported that Asian university students in medicine and nursing courses often experienced a high prevalence of depression at 11% and 43%, respectively [3]. In Australia and the United Kingdom, a study conducted among 434 physical therapy students found that the main type of stress experienced by students was academic-related stress, in which 71% of the students perceived their studies as more difficult than expected [4]. Furthermore, Jacob et al. performed a study in the Middle East and showed significant levels of stress among 312 healthcare students in the courses of physical therapy, communication disorders, and nutrition. However, there was no significant relationship between stress and demographic variables [5].

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Mental health is crucial for their academic achievement, social progress, economic development, and success of a country. It is well documented that healthcare university student experience a higher level of stress than their university peer [6]. Students with DAS are prone to academic difficulties, drop outs, relationship disturbance with friends and family members, failure to cope with anxious situation, and it could advance to panic disorders [7,8]. University students' mental health represents a growing public health concern that require an epidemiological data [9].

This study aims to evaluate the prevalence and severity of depression, anxiety, and stress among university students using the DASS and to explore potential demographic and contextual factors influencing these outcomes. By doing so, the research seeks to provide actionable insights for improving student mental health services and policies.

Materials and Methods

Study design, setting, and participants

A cross-sectional study was conducted to recruit on 200 students from Jamia Hamdard, Delhi. The study participants were students in the first, second, third, and fourth years of three academic courses (pharmacy and physiotherapy). All these courses run for four years and 6 months of internship. Part-time students and students who did not register in the respective semesters were excluded.

Data collection

Participant's recruitment started in March and ended in June 2024. Online information was distributed to students in different programs. The students who consented to participate in the study, Study protocols and objectives were explained to the participants before they signed the informed consent form. Self-administered sociodemographic and DASS-21 questionnaires were distributed to the students (online and offline) to be filled up within 20 min. The filled questionnaires were anonymous and were collected by the researchers. This was done in the time when there was no examination, so it will not affect our study. Students under psychiatric treatment were excluded. No incentive was given for participation.

Questionnaire

A two-section questionnaire was used in this study. The first section includes information on the socio-demographic data (gender, age, and marital status), academic-related data (course, current semester, university name etc.), medical history (presence of physical and mental dysfunctions) In the second section, the Depression Anxiety Stress Scale-21 (DASS 21) was applied. It is a 21-item self-report tool measuring attitudes and symptoms of SAD. There are 21 items with 7 items each for SAD. DASS-21 is a simplified version of the original DASS-42 which can measure all the psychometric properties to determine the state of SAD. For stress, the subscale focuses on persistent arousal and tension. As for anxiety, the items assess fear response and psychological arousal, whereas depression includes low mood, low self-esteem, and a poor outlook for the future. Participants answered on a four-point Likert scale (0=did not apply to me at all, 1=applied to me to some degree, or some of the time, 2=applied to me to a considerable degree, or a good part of the time, and 3=applied to me very much or most of the time). Based on the DASS-42 manual, scores from each subscale were summed up and then multiplied by two to allow its interpretation. Each subscale score ranges between 0 and 42 in which higher scores indicate greater levels of distress. The levels of sad were categorized as "normal", "mild", "moderate", "severe", and "extremely severe"14 which are shown in Table 1.

Table 1: Severity scores of depressions, anxiety, and stress.

Rating	Depression	Anxiety	Stress
Normal	0–9	0–7	0–14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely severe	28+	20+	34+

Data analysis

Descriptive analysis was done. Mean was calculated *via* SPSS (version 19).

Results

Depression

The majority of participants (66%, n=132) had normal levels of depression. However, 34% (n=68) exhibited varying levels of depression, with 12% (n=12) experiencing extremely severe depression. Out of 200 participants, 132 participants were normal (66.0%), 25 participants were having mild symptoms (12.4%), 20 participants were having moderate

symptoms (9.8%), 11 participants were having severe symptoms (5.7%) and 12 participants were having extremely severe (6.2%). The graphical representation is illustrated in Figure 1.

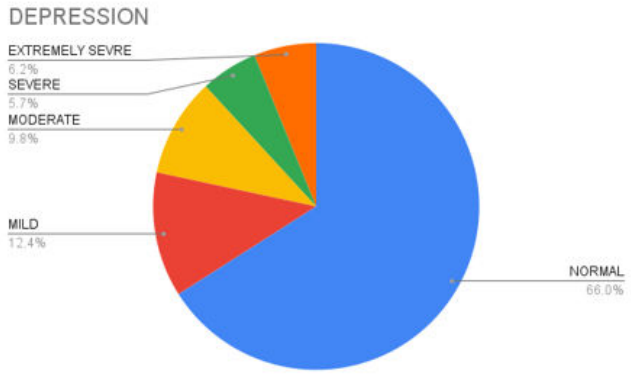


Figure 1: Mean percentage of depression.

Anxiety

A significant proportion of participants (61.9%, n=124) showed symptoms of anxiety, with nearly 19.6% (n=39) classified as experiencing extremely severe anxiety. Only 38.1% (n=76) were in the normal range. 6.2% (n=12) were in mild range, 26.3% (n=53 participants) were in moderate range, 9.8% (n=20 participants) were in severe range, 26.3% (n=39 participants) were in extreme severe range. The graphical representation is illustrated in Figure 2.

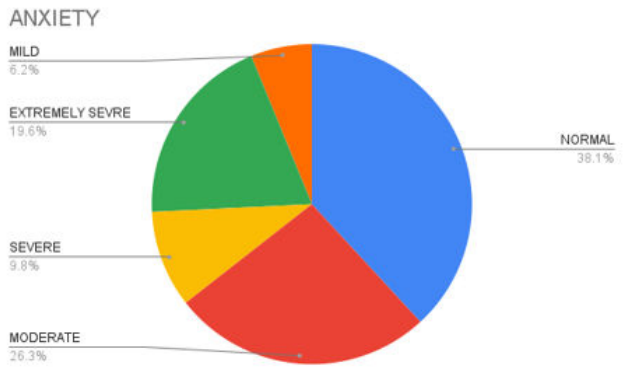


Figure 2: Mean percentage of anxiety.

Stress

While the majority of participants (59.8%, n=120) had normal stress levels, 40.2% (n=80) reported elevated stress, with 9.8% (n=20) falling into the extremely severe category. Whereas. 1.5% (n=3 participants) were having mild symptoms, 16.3% (n=33 participants) were having moderate symptoms and 11.9 % (n=24 participants) were having severe symptoms. The graphical representation is illustrated in Figure 3.

This systematic analysis highlights that while a majority of participants exhibit normal levels of depression and stress, a considerable number experience elevated levels of anxiety and stress, warranting targeted interventions. Specifically, attention should be directed towards managing severe and extremely severe cases of anxiety and stress.

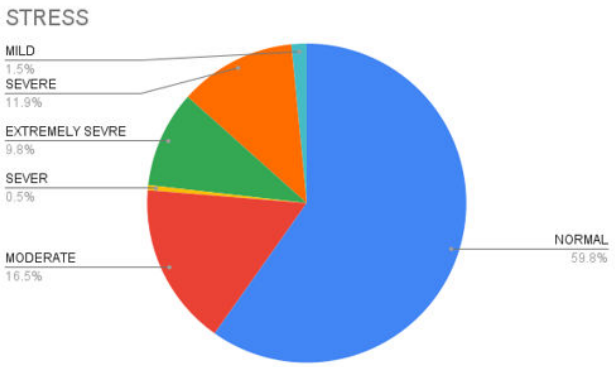


Figure 3: Mean percentage of stress.

Discussion

Undergraduate students are increasingly experiencing significant levels of depression, anxiety, and stress. These mental health issues are multifactorial, influenced by academic pressure, social dynamics, financial burdens, and personal challenges. The graphs reveal a significant overlap between anxiety and stress, suggesting shared stressors like academic workload and financial burdens. Despite higher stress levels, a significant population still faces mental health challenges, with many in extremely severe cases.

Depression

Depression among students is linked to intense academic demands, feelings of isolation, and the struggle to balance personal and academic lives. A study highlighted that the prevalence of depression among health sciences undergraduates ranged from 2.1% to as high as 88.8%, depending on the population and evaluation methods. Female students and those with a history of mental health conditions are at higher risk. Depression often manifests as persistent sadness, low energy, and diminished interest in activities, impacting academic performance and social relationships. Universities need to develop accessible mental health resources and peer-support systems to address these growing concerns.

Anxiety

Anxiety, especially in the form of generalized anxiety or test anxiety, is prevalent among undergraduates. Studies reveal that up to 82.6% of health science students may experience anxiety, which is exacerbated by looming deadlines, competitive environments, and uncertainties about the future. Anxiety symptoms include excessive worry, restlessness, and difficulty concentrating, which further impair academic achievements. Early interventions, such as mindfulness practices and counseling, have shown promise in managing anxiety in this population.

Stress

Stress among undergraduates is driven by financial concerns, adjusting to independent living, and academic workload. The COVID-19 pandemic added a layer of stress due to remote learning and health concerns, with research showing that stress levels in university communities remain high even post-pandemic. Stress manifests as physical symptoms like fatigue and headaches, along with emotional symptoms like irritability and overwhelm. Stress management programs focusing on time management, relaxation techniques, and campus-wide wellness initiatives are essential.

Undergraduate student's anxiety and stress levels highlight the need for structured mental health support, highlighting systemic challenges and the importance of preventive measures and early intervention.

Conclusion

Undergraduate student's depression, anxiety and stress levels highlight the affected structured mental health which could be due to multiple reasons. Therefore, it is concluded that prevalence rate of anxiety and stress is on higher side whereas depression is affecting mildly.

Conflict of Interest

There is no conflict of interest among authors for this study.

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No funding was provided for this study.

Informed Consent

Informed consent was taken from all the participants.

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