

Research Paper

Prevalence and Correlates of Depression, Anxiety and, Stress with Academic Self-Concept among Medical Students

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ABSTRACT

Psychological distress among medical students is commonly observed during their education and is generally related to poor academic self-perception. Many studies have reported that medical students experience significantly high levels of distress, particularly depression, Anxiety and, stress during their study and training/internship period. However, there are very limited studies investigating the relationship between the academic distress and academic self-concept along with exploring which domain of distress can severely affect the students' academic self-concept (ASC). In this research, a cross-sectional correlational research design was used to examine the prevalence of distress as well as its relationship with ASC. A total of 50 Undergraduate Medical students from Gorakhpur city were invited to participate in the study. After getting their consent, DASS-21 developed by Lovibond et al. (1995) and Reynolds' academic self-concept scale (1988) were administered to them. The result revealed that the prevalence rates of depression, anxiety and stress were different among the participants as we found that 44% of participants reported depression, 42% reported stress, and 32% reported anxiety. The result also reported a significant negative relation between psychological distress and academic self-concept.

Keywords: *Medical Students, Mental Health, Psychological Distress, Academic Self-Concept*

Medical education is widely regarded as one of the most challenging disciplines, characterized by highly competitive environment, demanding coursework, rigorous trainings, and extensive working schedules (Votmer, et al., 2021). While the goal of the medical education is to produce skilled, responsible (for saving lives and improving quality of life of people) and compassionate healthcare profession, the intense academic environment often comes at the cost to students' mental health (Buja, 2019). Stress, anxiety and depression are frequently reported among medical students and have been identified as critical issues that can impact their academic beliefs, their performance, professional development and overall wellbeing (Mallaram, et al. 2024). Medical students frequently find themselves in situations where they may participate in patient care,

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Received: February 4, 2025; Revision Received: May 07, 2025; Accepted: May 10, 2025

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occasionally with minimal guidance. A longitudinal study conducted by Rosal et al. (1997) showed that the mental health of medical students was comparable to that of the general population before beginning medical school. However, after starting their medical studies, their distress level increased.

Stress among medical students often stems from academic pressure, clinical responsibilities, time constraints and personal challenges ((Altiok & Ustun, 2013). Anxiety, on the other hand, may result from fears related to examination, clinical performance and future career prospects (Cruz Araújo, et al., 2022). Depression, though less overt, is a pervasive mood disorder that can emerge from prolonged exposure to stressors, feelings of inadequacy, or a lack of social support (January, et al. 2018). These domains of psychological distress not only affect students' mental health but also have a profound impact on their academic self-concept, the perception of their own academic ability and competence (Woo et al., 2015; Moran, 2016). Several cross-sectional studies have consistently shown a link between poor academic performance and psychological distress, although determining the direction of this relationship remains challenging.

Academic self-concept is a crucial psychological construct in educational research, influencing students' motivation, performance and resilience (Yamada, et al. 2014). For medical students, a positive academic self-concept is vital as it can foster confidence, effective learning and professional competence. However, stress, anxiety and depression can negatively impact academic self-concept, leading to reduced confidence and engagement in academic and clinical activities.

Depression is a common mood disorder that affects approximately 3.8% of the global population, including around 5% of adults worldwide (WHO, 2023). It causes distressing symptoms such as intense sadness, loss of interest, feelings of hopelessness, and diminished self-esteem. Additionally, the disorder is worsened by issues like sleep disturbances, changes in appetite, fatigue, and difficulty concentrating (WHO, 2023). Depression can be either persistent or recurring, (Lerner & Henke, 2008) significantly impairing an individual's ability to function effectively in various areas of life (Stegenga et al., 2012; Evans-Lacko & Knapp, 2016).

Anxiety disorders, on the other hand, are characterized by persistent, uncontrollable, and often irrational fear lasting for a minimum of six months. These disorders may also present with symptoms like palpitations, a heightened sense of tension, irritability, trouble focusing, sleep disturbances, and physical symptoms such as muscle tightness, headaches, and digestive issues (Munir & Takov, 2022). Globally, about 4.05% of the population is affected by anxiety disorders (Javaid et al., 2023). In medical students, the prevalence of anxiety is 33.8% (Quek et al., 2019), while depression and suicidal thoughts impact 27.2% and 11.1%, respectively (Rotenstein et al., 2016). This paper aimed to evaluate the prevalence of depression, anxiety and stress and their association with academic self-concept among medical students.

Objectives:

The objectives of this study were:

To assess the prevalence of stress, anxiety, and depression among medical students.

To examine the relationships between stress, anxiety, depression, and academic self-concept.

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Hypotheses:

In the present study, following hypotheses were made:

- There will be a significant difference in the prevalence of depression, anxiety, and stress among medical students.
- Depression, Anxiety and, Stress will be negatively correlated with academic self-concept.

RESEARCH METHOD

Research Design:

To assess the prevalence of stress, anxiety, and depression among medical students, as well as the relationship between these variables, the present study employed cross-sectional correlational research design.

Sample:

The population of relevance consisted of undergraduate medical students. Data were collected from 50 medical students in Gorakhpur city who were studying in various medical institutions, including All India Institute of Medical Sciences (AIIMS), Baba Raghav Das Medical College, Gorakhpur. A convenience sampling technique was employed for data collection.

Measures

- **Personal Data Sheet:** The personal data was also utilized to collect demographic and academic details, including age, gender, year of study, and academic performance. This information was used to contextualize the results and explore potential demographic correlates.
- **The Depression, Anxiety, and Stress Scale (DASS-21 by Lovibond & Lovibond, 1995):** DASS-21 was used to assess the levels of depression, anxiety, and stress among students. This scale includes 21 items divided into three subscales, each measuring one of the variables, rated on a 4-point Likert scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time). Higher scores on each subscale indicate greater severity of the respective condition.
- **The Academic Self-Concept Scale (Reynolds, 1988):** This scale was used to measure students' perceptions of their academic abilities. This validated scale includes 40 items rated on a Likert 4-point scale ranging from 1 (strongly disagree) to 4 (strongly agree), with higher scores reflecting a more positive academic self-concept.

Procedure

The study was conducted in medical institutions in Gorakhpur city after obtaining ethical approval. Participants were approached during their academic sessions and were briefed about the study's purpose. They were assured of confidentiality and provided informed consent. Each participant was given the DASS-21, the Academic Self-Concept Scale, and the Personal Data Sheet to complete. The scales were administered in a quiet classroom setting, and participants were allotted 20 to 30 minutes to complete the forms. After completing the scales, participants were thanked for their participation and debriefed.

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RESULTS

After data collection, the responses were analyzed according to the respective manuals. Descriptive statistics for depression, stress, and anxiety were computed for the sample of medical students.

Table 1: Mean and Standard Deviations of Depression, Anxiety and, Stress among Medical Students

Psychological Distress	Mean	Std. Deviation
Depression	8.56	5.30
Anxiety	7.64	4.42
Stress	8.98	4.24

The mean scores for each condition indicate that stress had the highest average score (M=8.98), followed by depression (M=8.56), and then anxiety (M=7.64). Specifically, the mean score for stress was the highest, suggesting that, on average, participants reported more intense symptoms of stress compared to depression and anxiety. The depression scores were slightly lower on average, with anxiety reporting the least intensity in terms of average scores.

However, when calculating the prevalence percentages, depression and stress had higher rates of occurrence compared to anxiety. Specifically, 44% of participants reported experiencing depression, 42% reported stress, and 32% reported anxiety. This suggests that, while the average intensity of stress was higher, a larger proportion of participants reported depression and stress than anxiety.

A Pearson Correlation Analysis was conducted to examine the relationships between academic self-concept (ASC), depression, anxiety, and stress. The results indicated significant positive correlations between the three psychological distress variables: anxiety and stress ($r=0.68$, $p<.01$), depression and anxiety ($r=0.32$, $p<.05$), and depression and stress ($r=0.31$, $p<.05$). Additionally, significant negative correlations were found between ASC and all three psychological factors. Stress was the strongest negative correlate of ASC ($r=-0.55$, $p<.01$), followed by depression ($r=-0.49$, $p<.01$), and anxiety ($r=-0.41$, $p<.01$).

Table 2: Coefficient of Correlation among Depression, Anxiety and Stress with Academic Self-Concept (N= 50)

Variables	Depression	Anxiety	Stress	Academic Self- Concept
Depression	1			
Anxiety	.32*	1		
Stress	.31*	.68**	1	
Academic Self-Concept	-.49**	-.41**	-.55**	1

Note: $P<.01$ **, $P<.05$ *

Following these correlation results, the findings indicate that higher levels of psychological distress—comprising depression, anxiety, and stress—are associated with lower academic self-concept. Specifically, stress showed the strongest negative correlation with academic self-concept, suggesting that individuals experiencing higher stress levels tend to have a lower perception of their academic abilities. Depression and anxiety also displayed negative

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associations with academic self-concept, although their relationships were somewhat weaker compared to stress. These results highlight the significant impact that psychological distress can have on students' academic self-perception.

DISCUSSION

The findings of this study provide valuable insights into the prevalence and relationships between depression, anxiety, stress and, academic self-concept among medical students. A strong positive correlation was observed between depression, anxiety, and stress, indicating that these psychological conditions often co-occur. This result aligns with previous research suggesting that depression, anxiety, and stress are interconnected constructs, often arising from similar environmental, personal, and academic challenges faced by students (Lovibond & Lovibond, 1995).

Stress was found to be higher among medical students than depression and anxiety due to the highly demanding nature of medical education (Trautwein, et.al., 2006). Medical students often face significant academic pressure, including rigorous coursework, frequent examinations, and high expectations from peers, faculty, and family. The competitive environment of medical education can also lead to a constant need to perform, leaving students with limited time for self-care and relaxation.

The negative relationships between academic self-concept and depression, anxiety and, stress underscore the detrimental impact of psychological distress on students' perceptions of their academic abilities. Among these, the strongest negative relationship was found between stress and academic self-concept, suggesting that stress exerts a particularly profound influence on how students evaluate their academic competence. This finding is consistent with the transactional model of stress, which posits that high levels of stress can diminish self-efficacy and self-perception (Piekarska, 2020; Lazarus & Folkman, 1984). The negative relationship between depression and academic self-concept was also significant but slightly weaker than that of stress. This finding highlights that depression, characterized by low energy, feelings of worthlessness, and a lack of motivation, negatively impacts students' ability to maintain a positive academic self-concept. Medical students, in particular, may experience this due to the demanding nature of their academic field, long hours of study, and high expectations. Interestingly, the weakest negative relationship was observed between anxiety and academic self-concept. While anxiety can impair academic performance and self-concept, it may also motivate certain students to prepare better, particularly in structured academic settings. This dual nature of anxiety may explain why its negative relationship with academic self-concept was less pronounced compared to stress and depression. However, sustained high levels of anxiety are likely to undermine self-perceptions over time, which warrants further investigation.

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Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Kumari, N., Singh, V. & Dubey, A. (2025). Prevalence and Correlates of Depression, Anxiety and, Stress with Academic Self-Concept among Medical Students. *International Journal of Indian Psychology*, 13(2), 1495-1501. DIP:18.01.136.2025 1302, DOI:10.25215/1302.136