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# A CROSS SECTIONAL STUDY TO ESTIMATE THE PREVALENCE OF PSYCHOLOGICAL DISTRESS ( USING DASS-21 ) AMONG UNDERGRADUATE MEDICAL STUDENTS AT SAWAI MAN SINGH MEDICAL COLLEGE, JAIPUR

Community Medicine

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## ABSTRACT

**Background:** Psychological distress is a significant concern among undergraduate medical students, driven by the demanding nature of medical education. This cross-sectional study aims to estimate the prevalence of psychological distress, including depression, anxiety, and stress, among medical students at Sawai Man Singh Medical College, Jaipur, using the Depression Anxiety Stress Scale (DASS-21). **Objectives:** The primary objective was to estimate the prevalence of psychological distress among undergraduate medical students. The secondary objective was to identify factors associated with psychological distress, including age, socioeconomic status, and academic year. **Methods:** A total of 460 students from different academic years were surveyed using the DASS-21, a validated tool for measuring psychological distress. Sociodemographic data were also collected, including age, gender, family structure, and socioeconomic status. Statistical analysis was performed to assess associations between psychological distress and various factors. **Results:** The prevalence of psychological distress was 12.8%, with anxiety being the most common (6.5%), followed by depression (2.2%). A significant association was found between age and mental illness (p=0.002), with older students (≥23 years) showing higher distress levels. The majority of students belonged to the highest socioeconomic class (SEC I), though no significant association between socioeconomic status and psychological distress was observed. The duration of study also had a significant impact on mental health, with final-year students reporting higher distress levels (p=0.001). **Conclusion:** The study highlights a significant prevalence of psychological distress among medical students, with anxiety being the most common form. Age and academic year were important factors contributing to this distress, emphasizing the need for mental health interventions, such as counseling and peer support programs, to mitigate the psychological burden on medical students. Comprehensive mental health support is essential to address the psychological needs of this vulnerable population.

## KEYWORDS

Psychological distress, DASS-21, medical students, anxiety, depression, stress, mental health, cross-sectional study

## INTRODUCTION

Psychological distress refers to the emotional discomfort experienced by an individual in response to a specific stressor or demand. It can result in harm, either temporary or permanent, to the person's physical or mental health. Ultimately, it is the inability to effectively manage the stressor and the emotional upheaval that ensues.1

Stress is a bio-psychosocial model that refers to the consequence of the failure of an organism to respond adequately to mental, emotional, or physical demands. Clinically, anxiety is characterized by intense feelings of dread, accompanied by somatic symptoms that indicate a hyperactive autonomic nervous system, whereas depression manifestations loss of interest or pleasure, sadness, feelings of guilt or low self-worth, disturbed sleep or appetite, extreme tiredness, and poor concentration.2

In the pursuit of a career in medical science, undergraduate students often find themselves navigating a rigorous academic curriculum, demanding clinical rotations, and the constant pressure to excel academically and professionally. Amidst the relentless demands of their training, the mental well-being of medical students becomes a paramount concern.3

The prevalence of psychological distress among this demographic has garnered increasing attention in recent years, as studies reveal alarming rates of stress, anxiety, depression, and burnout among medical students worldwide.2-4

It has been demonstrated that 25%–90% of medical students are stressed, which is an important determinant of depression and anxiety. A systematic review of 183 studies from 43 countries revealed crude prevalence of depression among medical students to be around 27.2% (95% confidence interval: 24.7%–29.9%) with 11.1% prevalence of suicidal ideation. 5 On the contrary, a recent large sample survey in southern part of India reported an overall prevalence of depression of 15.9% among general population.6

Students with dysfunctional emotional state need serious attention and management otherwise inability to cope successfully may lead to adverse consequences at both personal and professional levels. The demand for curbing mental health conditions, especially depression, is gaining momentum across the world since the last couple of decades.7

Mental health of a medical student remains affected throughout training due to long study and working hours, extensive course content, examinations, peer competition, uninspiring environments, sleep deprivation, and loneliness including other factors interfering in everyday personal, social, and family life. 8

Previous studies have shown that stress is adversely affecting medical student physical and cognitive capacities. When associated with anxiety and depression, occupational stress, as experienced by the student, can influence his or her quality of life and decrease his or her academic performance due to anxiety-induced difficult cognitive functioning, such as memory disorders, blockage, incapacity to make decisions, and increased sensitivity to appraisals of others.9 Similarly, high rates of depression, anxiety, and stress can result in poor quality of life, drug abuse, and suicide.10

It is no surprise that mental health of medical students in India as an area of research domain has attracted the second highest attention of the faculty in medical colleges of country after medical education, learning process, and evaluation. With this background, a study is undertaken to assess the prevalence of depression, anxiety, and stress among Under-graduate medical students enrolled in a Sawai Man Singh medical college Jaipur.

Sawai Man Singh Medical College, located in the vibrant city of Jaipur, stands as an emblem of academic excellence and medical training in India. Within the corridors of this esteemed institution, a diverse cohort of aspiring physicians embarks on their journey towards becoming healthcare professionals. However, the challenges they face extend beyond the realm of textbooks and clinical skills. The

psychological toll of medical education often remains understudied and underestimated, yet its impact on student well-being and academic performance is profound.

### Aim and Objectives

- Aim of study was to study the prevalence of psychological distress among under-graduate medical students of Sawai Man Singh Medical College, Jaipur
- Primary Objective - To estimate the prevalence of psychological distress among undergraduate medical students of Sawai Man Singh Medical College Jaipur
- Secondary Objective- To evaluate the factors associated with psychological distress among under- graduate medical students of Sawai Man Singh Medical College Jaipur.

## MATERIALS AND METHODS

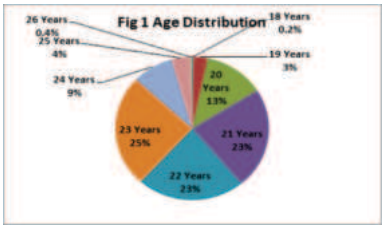
Observational Cross-sectional study conducted at Sawai Man Singh Medical College, Jaipur started on 1 April 2023 after approval from Institutional Research Review Board (RRB) and ethics committee conducted till May 2024. Study conducted on total 460 students 92 students each from 1st 2nd, 3rd, and 4th year and intern (Batch 2022, 2021, 2020, 2019, 2018 respectively) under-graduate medical students.

### Study Tools

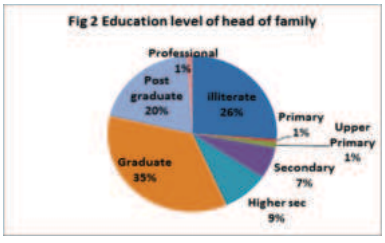
Validated and standardized "Depression Anxiety Stress Scale (DASS 21)" questionnaire will be used for the present study. The internal consistency, i.e., Cronbach's alpha value was 0.87 that was suggestive of high reliability.

## RESULTS & OBSERVATIONS

The majority of students are aged between 21 to 23 years, with 105 students each in the 21 and 22 age groups, making up 22.8% of the total. Students aged 23 years constitute the largest group at 25.2%. There are very few students aged 18 (0.2%) and 26 (0.4%). Male students make up the majority at 60%, while female students constitute 40%. The majority of students come from nuclear families (79.5%). Only 7.8% of students belong to joint families, and 12.7% come from three-generation families.



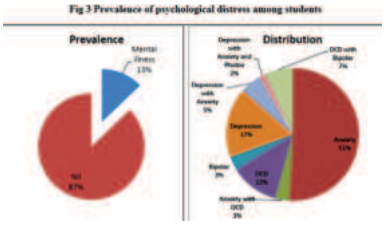

A significant portion of students have heads of families who are graduates (35.1%) or postgraduates (20.6%). A notable 26.1% of students have heads of families who are illiterate. Very few students have heads of families with primary (0.6%) or upper primary (1.1%) education.




The most common occupation for the heads of families is clerical/shop/farmer (35.2%), followed by semi-professional (33.4%). Professional occupations account for 19.3%. There are very few heads of families who are unskilled workers (0.43%). The largest income group is Rs 11-20 lakh, making up 39.12% of the sample. Most families have an income up to Rs 5 lakh (27.4%) or between Rs 5-10 lakh (26.9%). Only 6.5% of families earn more than Rs 20 lakh annually.The majority of students belong to the highest socio-economic class (73.26%). Only 2.8% of students belong to the lowest socio-economic class (SEC V).

### Prevalence Of Psychological Distress Among Students

Anxiety is the most common psychological distress, affecting 6.5% of the total sample. Depression alone affects 2.2% of students, while depression with anxiety affects 0.7%. A significant 87.2% of students report no mental illness. Among 59 total mental illness affected students majority of have anxiety (51%) and Depression (17%) and OCD issues (12%).




Illustrates the distribution of different types of psychological distress among students, Anxiety is the most prevalent, followed by depression.

Mental illness prevalence is significantly associated with age (p=0.002). Higher age students suffered more with mental issues. The age group 23 years has the highest number of mental illness cases (15 cases). Students aged 18 and 19 years have the least mental illness cases. Older under graduate batches suffering with higher proportions of mental illness. Clearly pointing out stress full medical education environment, batch 2022 is an exception which could be due to higher suicides news in the college during 2023-24.

No significant association between gender and mental illness (p=0.16). Both males and females exhibit similar prevalence rates for mental illnesses.

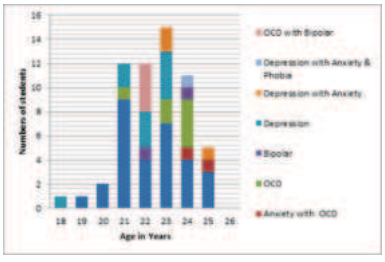



**Fig-4** Association of Mental Illness with age of students

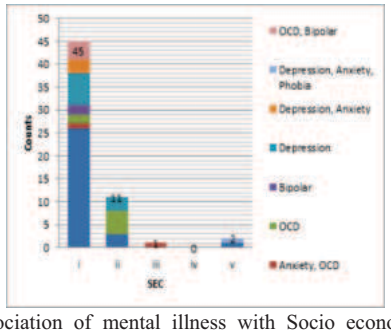



**Fig 5** Association of mental illness with Socio economic status Majority of mental illness cases are from the highest socio-economic class (SEC I).

No significant association between addiction history and mental illness (p=0.6). Students with a history of alcohol use show higher rates of mental illness.

**Table 1 Correlation of Mental Illness with DASS 21**

| DASS 21 | Anxiety | Anxiety, OCD | OCD | Bipolar | Depression | Depression, Anxiety | Depression, Anxiety, Phobia | OCD, Bipolar | Total | Nil | X2 | P value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ≤7 | 6 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 11 | 250 | | |
| ≤9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 30 | 72 | 0.00 |
| ≤14 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 56 | | |
| ≤18 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 9 | 13 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ≥19 | 10 | 2 | 7 | 2 | 6 | 2 | 0 | 0 | 29 | 52 | | |
| Total | 30 | 2 | 7 | 2 | 10 | 3 | 1 | 4 | 59 | 401 | | |

Significant correlation present between DASS-21 scores and mental illness severity Higher DASS-21 scores (≥19) are associated with increased prevalence of various mental illnesses.

## DISCUSSION

The present study aimed to estimate the prevalence of psychological distress among undergraduate medical students at Sawai Man Singh Medical College, Jaipur, using the DASS-21 scale. The findings reveal that 12.8% of the students experienced some form of psychological distress. Anxiety was the most common disorder, affecting 6.5% of the students, followed by depression at 2.2%.

The age distribution showed that the majority of the students were between 21 and 23 years old. This age group also exhibited the highest prevalence of psychological distress. The association between age and mental illness was statistically significant (p=0.002), indicating that older students might be more susceptible to stress and anxiety. This could be due to increased academic pressures and the impending transition into professional roles. Similarly Kotabal et al (2023)[11] also find Medical students with >20 years of age group, females, final year students, and occupation of their father being doctor showed significant association with the level of stress.[11]

The study comprised 60% male and 40% female students. While the prevalence of psychological distress was slightly higher among females (15.8% vs. 10.9% in males), Similarly Deshmukh MP et al (2022) stated that most of females having higher level than males. Students of second year were having the highest incidence of stress.[12] The majority of the students (73.3%) belonged to the highest socioeconomic class (SEC I), followed by SEC II (19.8%). Despite the higher prevalence of psychological distress in SEC I, the association between socioeconomic status and mental illness was not statistically significant (p=0.78). This indicates that psychological distress is prevalent across all socioeconomic strata among medical students.

### Mental Illness and Duration of Study

A significant association was observed between the duration of study and the prevalence of mental illness (p=0.001). Older undergraduate batches (2018 and 2019) reported higher proportions of mental illness compared to newer batches. This highlights the cumulative effect of academic and clinical pressures over the years. The 2022 batch, however, showed an exception, possibly due to increased awareness and support systems following higher suicide rates reported in the college during 2023-24. Karthik RC et al. (2022)[13] reported that prevalence was significantly more among those having a family history of mental illness. The prevalence of depression was 48.33%, anxiety was 60.56%, and stress was 27.22%. Regular health education, stress counseling, and peer group sessions can reduce the level of mental distress among medical students.[13]

## CONCLUSION

The study highlights the significant prevalence of psychological distress among undergraduate medical students at Sawai Man Singh Medical College. Age, duration of study, head of family's education and occupation emerged as significant factors associated with mental illness. The findings underscore the need for comprehensive mental health support systems, including counseling services, stress management programs, and peer support groups, to address the psychological needs of medical students. Further research is needed to explore the underlying causes and develop targeted interventions to promote mental well-being in this vulnerable population.

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