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**DEPRESSION AND MENTAL HEALTH DISRUPTIONS IN MEDICAL STUDENTS**

МЕДИЦИНАЛЫК СТУДЕНТТЕРДИН ДЕПРЕССИЯ ЖАНА ПСИХИКАЛЫК ДЕН  
СОЛУГУНУН БУЗУЛУШУ

ДЕПРЕССИЯ И НАРУШЕНИЯ ПСИХИЧЕСКОГО ЗДОРОВЬЯ У СТУДЕНТОВ-МЕДИКОВ

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## DEPRESSION AND MENTAL HEALTH DISRUPTIONS IN MEDICAL STUDENTS

### Abstract

The experience of studying abroad primarily leaves students exposed to mental health challenges like depression, which exerts a detrimental effect on their academic performance & overall well-being. An important factor which contributes to this problem is the lack of familial assistance. The away from home feeling for students has further worsen these challenges, escalating stress, anxiety, and depression among medical students worldwide. This analysis compiles data from medical academies and faculties worldwide to evaluate the psychological impact of the various factors on medicos. Findings indicate that the how students and foreign have adverse affect on their mental health due to academic performances and due to ongoing demand and craze of medical education, leading to perceptible changes in emotions, behaviours, and mental well-being. Exaggerated levels of stress, depression, and anxiety have widely spread among medical students during their examinations and semesters and completion of their projects in given time periods.

**Keywords:** sleep deprivation, medical students, academic performance, mental health, physical health

### МЕДИЦИНАЛЫК СТУДЕНТТЕРДИН ДЕПРЕССИЯ ЖАНА ПСИХИКАЛЫК ДЕН СОЛУГУНУН БУЗУЛУШУ

### ДЕПРЕССИЯ И НАРУШЕНИЯ ПСИХИЧЕСКОГО ЗДОРОВЬЯ У СТУДЕНТОВ-МЕДИКОВ

#### Аннотация

Чет өлкөдө билим алуу тажрыйбасы, биринчи кезекте, психикалык саламаттыкты сактоо маселелерине дуушар болгон студенттерди басаңдатуучу студенттерди таштап, алардын академиялык иштери жана жалпы жыргалчылыгына терс таасирин тийгизет. Бул көйгөйгө алып келген маанилүү фактор – бул үй-бүлөлүк жардамдын жоктугу. Дүйнө жүзүндөгү студенттер үчүн үйдөгүдөй, стресстен, тынчсызданууну, тынчсызданууну, тынчсызданууну күчөтүп, дары-дармектерден ар кандай факторлордун психологиялык таасирин баалоо үчүн, медициналык академиялар жана факультеттердин маалыматтарды түзөт. Илимий спектаклдерден улам студенттердин жана чет элдик өз психикалык ден-соолугуна канчалык деңгээлде таасир этип, медициналык билим берүү, жүрүм-турумдун, жүрүм-турумдагы жана психикалык жыргалчылыктагы өзгөрүүлөргө алып келгенин жана медициналык билимге ээ болууга жана өрөөнгө байланыштуу өз психикалык саламаттыгына терс таасирин тийгизет. Стресстин, депрессиянын жана тынчсыздануунун апыртылган деңгээли медициналык студенттердин арасында кеңири жайылып, белгиленген мөөнөттө алардын семестри жана алардын долбоорлорун аяктоо учурунда кеңири жайылган.

**Ачык сөздөр:** уйкусуздук, медициналык студенттер, окуу көрсөткүчтөрү, психикалык ден соолук, физикалык ден соолук

#### Аннотация

Опыт обучения за границей в первую очередь оставляет студентов, связанных с проблемами психического здоровья, таких как депрессия, которая оказывает вредное влияние на их академическую успеваемость и общее благополучие. Важным фактором, который способствует этой проблеме, является отсутствие семейной помощи. Вдали от домашнего чувства для студентов еще больше ухудшили эти проблемы, эскалация стресса, беспокойства и депрессии среди студентов -медиков во всем мире. Этот анализ составляет данные медицинских академий и способностей по всему миру для оценки психологического воздействия различных факторов на Medicos. Результаты показывают, что как студенты и иностранные, оказывают неблагоприятное влияние на свое психическое здоровье из-за академических выступлений и из-за постоянного спроса и увлечения медицинским образованием, что приводит к ощутимым изменениям эмоций, поведения и психического благополучия. Преувеличенные уровни стресса, депрессии и тревоги широко распространены среди студентов -медиков во время их экзаменов и семестров и завершения их проектов в данный период времени.

**Ключевые слова:** лишение сна, студенты-медики, успеваемость, психическое здоровье, физическое здоровье

## Introduction

Before tackling depression, we first need to understand what it really takes. When people are depressed, they perceive the world with a negative outlook, which causes an overwhelming feeling of sadness. There are different types of complex conditions including.

- **Winter blues:** Often triggered by winter and alleviated in summer.
- **Chronic Depression:** Diagnosed when depressive symptoms lasts for minimum two weeks.
- **Long-term depression (Dysthymia):** A chronic form of depression exists for at least 2 years.
- **Disruptive Mood Disorder:** Arising in childhood, mostly before the age group of 10.
- **Severe Pre-menstrual syndrome:** Depression associated with hormonal changes during the menstrual cycle, get resolved after the completion of cycle.
- **Depressive disorders due to Medical Conditions:** Conditions like Parkinson's disease or chronic pain can lead to depressive condition, Heart disease, diabetes and neurological disorders triggers depression.
- **Irregular Menstrual Cycles & Hormones fluctuation :** Irregular menstrual cycle can exacerbate depression and anxiety in females, due to hormonal imbalances, due to this symptom like pain, fatigue and mood swings can arise which leads difficult for students to manage their academic and personal well being.

**Common symptoms** of depression comprise a lack of interest in previously enjoyable activities, changes in appetite pattern, and weight may be gain or loss, no proper sleep or excessive sleep, personality shifts, feeling of guilt, difficulty in concentration and making decisions, serious thoughts like desire to end life come to their mind, physical symptoms like headaches and stomachaches without a clear medical cause and overall diminished motivation(decreased desire in the activities that were previously enjoyable).

### Causes of depression comprise many factors:

- **Genetic Factors:** Individuals with a first degree are relative likely to suffer 3 times more from depression & more likely to develop it.
- **Neuro chemical Imbalances:** Disturbances in serotonin and dopamine uptake and inhibition can lead to depression states.
- **Life Stressors:** Chronic stress, family loss, and overwhelming challenges more likely to add to the condition.
- **Substance Abuse:** Alcohol and other drugs disrupt the various chemical imbalance in brain and can lead to depression and anxiety.
- **Environmental factors:** Relationship problems, prolonged stress and self isolation can trigger depression.

**Treatment options** comprises of selective serotonin re uptake inhibitors (SSRIs) such as Escitalopram (Lexa pro), Fluoxetine (Prozac), antipsychotic medications such as Haloperidol and Thorazine, cognitive behavioural therapy (CBT), Interpersonal therapy (IPT), Psychodynamic therapy. Social support and Family therapy (involving family members in communication) can help to overcome from depression and mental illness.

International medical students face unique stressors which escalate their levels of depression and anxiety. To Students feel immense academic and social pressure as well that can be so challenging along with culture and climate. They also face isolation from family support systems so at this point they feel alone and need support. Making it big in a tough medical field and passing the licensing exams are overwhelming anyway. Language obstacles make it even harder for students to communicate and integrate effectively when they can't understand.

To assuage these struggles, universities must foster inclusive environments that offer mental health resources and peer support. Seasoned professionals should be there for mentoring and guiding the newcomers, dealing with feelings of isolation, loneliness and self-doubt. Many young aspiring doctors are driven by a deep desire to master their profession. As a result of this, they often collapse from burnout and suffer from imposter syndrome. Nevertheless, it is important to note that despite these obstacles, the incidence of mental health conditions such as depression and anxiety has been steadily rising. Teaching healthcare professionals about mental health help them care for their patients' mental well-being as well as their own.

## Methodology

From January to March 2021, a study examining the mental health of medical students was conducted across three institutions in Uttar Pradesh, India: King George Medical University, Hind Medical College and BRD Medical College. Approved by the Institutional Review Board (IRB), the study utilised an online feedback form and assessment which was spread via platforms such as WhatsApp, Facebook, Telegram and other methods like **Focus groups** for that those who were ready (For in-depth insight interaction and exploration of ideas) Participants, including medical students, they were briefed that what is purpose of this study and were provided & informed consent through a permission form. To secure privacy, anonymity was maintained throughout this whole process.

The timing of the survey was carefully planned to bypass coinciding with ongoing or recent exams. Participants were asked to refrain from testing for at least 25 days before and after completing the questionnaire and participation in groups, for ensuring unbiased responses from participant, online surveys particularly eliminates interviewer bias. Mainly two to three structured feedback forms , pretested on a sample of 132 students, were employed to collect data.

While last and previously completed research indicated that many medical students face recurring episodes of depression while their training, limited studies delve into the persistence of depression, factors influencing recovery, and the role of endurance and determination. Personality traits are important predictors of mental health in terms of outcomes, with anxiety being negatively related to emotional and psychological stability and positively related to levels of stress.

Medical education is a system that tends to take much away from students, and dull their coping mechanisms. While different students experience feelings of depression, frustration, and anxiety with unequal difficulties, we all have excess ability to be well that can get neglected through a lack of guidance. Spending meaningful time with health-building and meaningful activities and spending meaningful time with members while participating in health-building measures to effectively relieve the burden and restore balance when you're lonely. Students who have less resilience and don't get the help they need at the right moments can feel a lot of internal turmoil. However, a caring community can show them ways to cope and transform their worries into fleeting troubles. As a result,

this can boost a student's resilience abilities through community skill strategy as well as camaraderie and friendship.

Here, this study attempts to bridge the gap through our longitudinal cohort of the medical students as they traverse through the mental health challenges; accentuation of critical as well as pivotal need of early interventions that underpin resiliency coupled with fostering a supportive academic climate.

### **Modelling And Analysis**

The analysis shows two main components based on the study of six items (Sample collection, Sample preparation, Calibration, Instrumentation, Data Analysis, Interpretation and Reporting ) through elemental analysis. The first component explained 48.22% of the variance, while the second component explained 24.28%. A two-component model was considered appropriate on the basis of principal components analysis, variance plots, and item patterns.

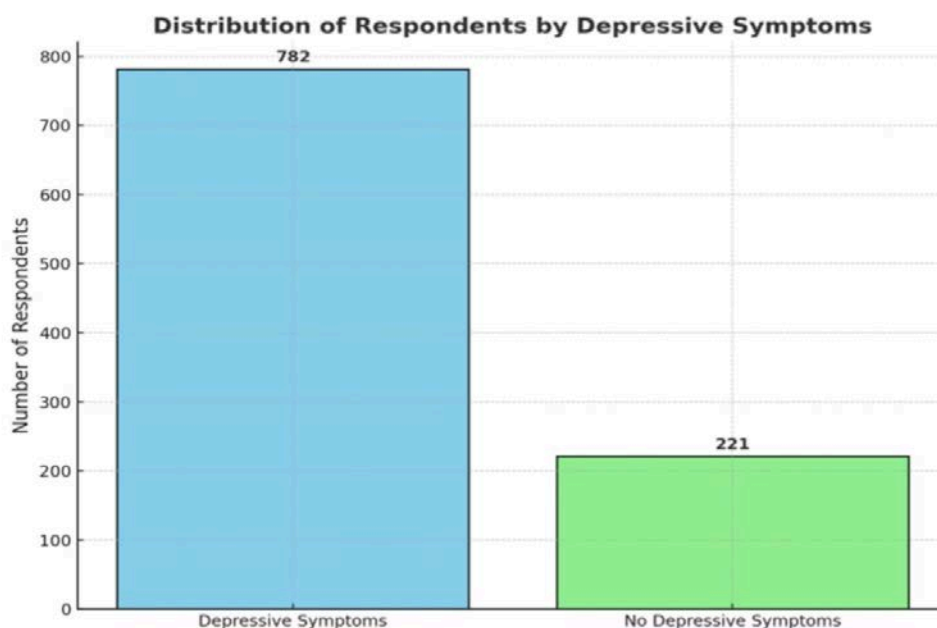
**“Mental strain”**, the first factor, had strong loadings ( $> 0.186$ ) on 4 items that referred to feeling tired, deterioration of one's emotions, loss of interest, and being emotionally drained and depleted. The second factor which was named ‘Self-Achievement ’ has high loadings ( $> 0.64$ ) in two items related to achievement. This study found that emotional and psychological stress was the most common cause.

The remaining four items about emotional outbursts were subject to a more detailed and clearer analysis. The mean response across these items was calculated as the score provided that at least 71% of the questions are answered. To remediate lost data, data reconstruction methods were used in less than 7% of cases to ensure bias is reduced (negligible bias). The emotional eruption scale was reliable with a reliability coefficient called as Crohn alpha the value of which was 0.77. The greater the value of the reliability coefficient, the better the measurement instrument.

Statistical methods like Fisher's exact test (For small sample sizes), chi-square tests (Goodness of fit and test for independence) and ANOVA (Analysis of variance) were used to determine differences in epidemic trends, behavioural patterns, and mental and psychological health variables across the three universities. Depression levels were further evaluated using linear and multivariate covariance models, adjusting for **“unresolved psychological health concerns,”** defined through a scale k/a Likert scale (Rating scale) and Responses of agreement of participants are rated according to their agreement like 5 is given for strong agreement in scale. Semantic Differential scale (use bipolar adjectives like good-bad & happy-sad). They were combined into a single category for clarity.

Psychological weariness was compared among student groups, with adjustments made for total Patient Health Questionnaires -3 scores which evaluates frequency of symptoms such as (1. low rate of interest or happiness in doing things. 2. Feeling down, state of depressed or hopeless, 3. Trouble falling or staying asleep or sleeping too much), These 3 are taken from first 3 items of Patient Health Questionnaire-9. Pairwise comparisons evaluated and analysed the mean responses across various institutions, identifying that what are key trends. Using an integrated clear-cut assessment analysis, impact depression predictors were determined utilizing age and gender behavior (sleep, exercise, unmet mental health needs) uninterrupted elements, and overwhelming fatigue and cognitive depletion psychological and cognitive benchmark continuous variables.

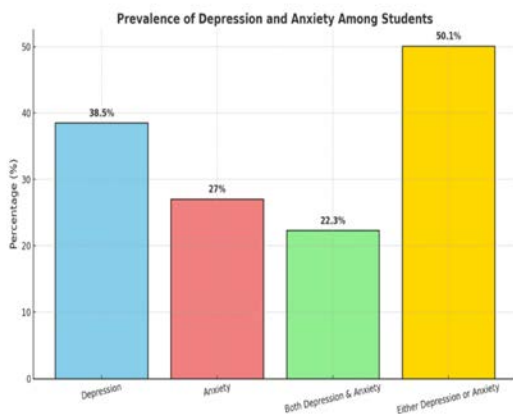
We tried repeating variables so that the results were reliable. Extensive analysis have been done in using statistical analytical system. All the results must be interpreted with care.



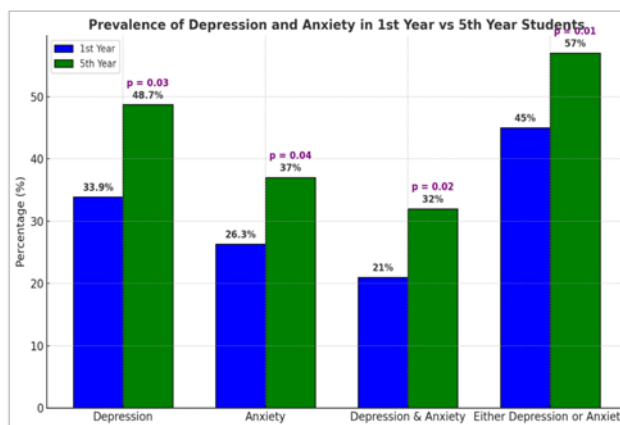
### **Finding And Analysis**

A recent survey among founding medical students found that 38.5% showed symptoms of depression and 27% suffered from anxiety. Out of these students, 22.3% are depressed and anxious. More than half of the students (50.1%) have depression and/or anxiety. This is most common for students from Europe. Here, 45.7% of participants suffered from depression and 32.4% from anxiety. Students of South America had a lower prevalence with 30.2% indicating depression and 18.9% anxiety. The research shows many students are diagnosed with mental health conditions or have suicidal thoughts, which is global in nature.

**Diagram 1. Prevalence of depressive and anxiety symptoms across different academic years of medical students. (first-year n = 104, fifth-year n = 132)**



**Diagram 2. Prevalence of Depression and Anxiety in 1<sup>st</sup> Year vs 5<sup>th</sup> Year students**



## Conclusions

The study emphasises the substantial mental well-being challenges faced by medical trainees, mainly those studying who are away from home, abroad or in unfamiliar environments. The study reveals that depression, anxiety and stress are common among youths due to academic obligations and lack of family support. Additionally, with insufficient coping mechanisms and resilience strategies in place, any emotional and psychological strain during critical periods, such as exams or semester and project completions, becomes harder to bear. It was revealed from the result of the analysis that two main factor mental strain and self-achievement are playing a key role in the medical students vicious cycle of causal factors affecting their life satisfaction. Total emotional exhaustion and sense of accomplishment were the main parts that emerged, while the most higher was emotional distress. The assessment approaches of the research added using Fisher’s Exact Test along with Chi-Square and ANOVA were used which was able to provide significant trends in mental health across a different health institutions. Students outlooks and trends can be measured by rating scales. The study shows importance of emotional and psychological support for medical students. Universities ought to facilitate and foster conditions conducive to mental health, followed by support and mentorship, to lessen and eradicate toxic feelings of isolation and stress. Universities should organise seminars and group discussions about depression. Including fitness-promoting activities like light workouts and mindfulness has proven to be beneficial. Therefore, making mental health resources accessible can mitigate the adverse effects of depression and anxiety which can guarantee a better future for our healthcare service providers. Furthermore, to master the coping skills in the arduous journey of medical education, the medical students should take part in skill development programs like self-awareness, optimism, coping skills, emotional control, and social support-seeking.

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