

## Study of Depression among students of faculties of medicine in Nangarhar Province

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### Abstract

**Background:** Depression is a mental disorder characterized by anhedonia (loss of interest/pleasure), anergy (decreased energy), feelings of guilt or low self-worth, disturbed sleep/appetite, and poor concentration. This study aimed to determine the prevalence of depression among medical students in Nangarhar faculties of medicine.

**Methods and Materials:** A cross-sectional study was conducted across all four Medical universities in Nangarhar from November to December 2023. We assessed depression and its associated factors using the 9-Item-Patient Health Questionnaire (PHQ-9) and a structured questionnaire. A sample of 341 medical students was included, calculated from a total population of 3500 with a 95% confidence level and 5% margin of error.

**Result:** Participants' ages ranged from 17 to 35, with a mean age of 23.5 (SD 2.975). The age range most affected by depression was 17 to 24 years (69.8%).

The severity breakdown among the 341 participants was: minimal: 69 (20.2%), mild: 86 (25.2%), moderate: 79 (23.2%), moderately severe: 82 (24.0%), severe: 25 (7.3%).

Students in the third academic year showed the highest frequency of depression (106 cases, 31.1%), followed closely by the fourth year. However, fourth-year students had the most cases of severe depression, while the third year had the most moderately severe cases.

**Conclusion:** Depression was more prevalent among younger students, particularly those aged 23, and in the higher academic years, specifically the third and fourth years. While mild depression was the most common overall finding, moderately severe depression was the second most frequent category.

**Keywords:** Depression, Cases, Factors, Medicine Faculties

### **Introduction**

#### Characteristics and Global Burden

Depression is a profound mental disorder defined by core symptoms, including anhedonia (loss of interest or pleasure), anergy (decreased energy), feelings of low self-worth, and disturbances in sleep, appetite, and concentration. With a global incidence of 3.2\% for depressive episodes, it is a major contributor to the worldwide burden of disease. Given its tendency for early onset and recurring episodes, the World Health Organization (WHO) identifies depression as the single highest contributor to global disability, accounting for 7.5\% of all years lived with disability in 2015. The WHO reported that 4.4\% of the global population suffered from it in 2015.

#### High Prevalence Among Medical Students

The prevalence of depression is particularly high within the academic environment, notably among college and university students. However, medical students consistently exhibit rates of depression and psychological distress that are much higher than those found in the general population. A systematic analysis in 2013 found that the prevalence of depression among medical students worldwide ranged widely from 10\% to 85\%, with a weighted mean prevalence of 30.6\%. Regional studies in the UAE, Saudi Arabia, and Oman from 2009–2014 also reported high frequencies, ranging from 22.2\% to 48.2\%.

#### Stressors Unique to Medical Education

Medical school is widely recognized as an extremely stressful period of psychological anguish due to the unique demands of medical education. These demands include an excessive workload, numerous examinations, time constraints, information overload, and the pressure of work and career decisions. Research worldwide has repeatedly demonstrated that depression is very common among this group; for example, a US study reported 24\% of medical students suffer from depression, while 39\% of Indians reported being affected.

#### Age and Academic Stage Vulnerability

Young adulthood, which characterizes the age group of many medical students, is defined as an identity-forming stage involving significant physical and social changes alongside a variety of emotional and societal conflicts. Studies indicate that medical students are more likely to experience anxiety and depression, and their total psychological distress levels are consistently greater than those of their age-matched peers. A UK study found the prevalence of depression to be between 14\% and 24\%, while Turkish medical students showed an incidence of 21.9\%.

#### Contributing Factors and Risk Elements

This psychological distress is impacted by a number of factors, including the strain of coursework, pressure from exceptionally skilled classmates, obstacles to achieving their desired specialty, and the transition from student to near-doctor. Additional variables contributing to stress include having unrealistic expectations of themselves, their families, and teachers, and the subsequent inability to engage in extracurricular activities. Non-academic risk factors also play a role, such as female gender, a family history of depression, and social issues (like the marginalization of women in some regions). All these factors may be why medical students, when compared to the general population of the same age group, were found to have higher levels of depression and anxiety.

#### Negative Consequences and Public Health Impact

The high rates of depression among medical students are a significant concern. Elevated stress levels and resulting mental health issues can lead to detrimental consequences at the individual level, such as poor academic performance, substance misuse, college dropout, and heightened suicidal ideation. Furthermore, these issues have a negative impact on the quality of patient care and the overall culture of the medical field. Suicide was the second most common cause of death worldwide for those aged 15 to 29 in 2015.

#### Conclusion and Rationale

In summary, the literature establishes that medical students represent a highly vulnerable group, facing both

the stresses of daily life and the added, intense psychological strain of their chosen profession. This stress-related mental illness has become increasingly common in the competitive academic atmosphere, with social and environmental factors playing a large role. Addressing this high, pervasive prevalence of depression is paramount for the students' personal well-being, academic success, and future professional effectiveness.

### **Research question**

1. What is the Prevalence of depression among medical students in Nangarhar Province?
2. What is the most common age affected by depression among medical students?
3. Is there any association between academic year and depression?
4. Severity of depression among medical students?

### **Scope of Study**

This study is geographically focused on the medical student population within Jalalabad City (Nangarhar Province). The aim is specifically to determine the prevalence and severity of depression, as well as the age distribution of the condition among medical students attending the medical colleges and schools in this city. The research is intended to provide specific data on the current state of mental health issues—namely depression—within this distinct student group.

### **Objectives**

To determine the prevalence of depression among medical students in nangarhar and to find the degree of depression among medical students along with association of academic year and depression.

According to a meta-analysis of 26 research on the mental health of adolescents, the total prevalence of major depressive disorders among adolescents between the ages of 13 and 18 is 5.6%. In the Asian context, a 2016 research of teenagers in grades 9–12 from 40 schools in Bihar, India, found that over half (49.2%) of the students suffered from depression. The total prevalence of depression is 42.6%, with mild, moderate, and severe depression being 21.5%, 18.1%, and 3.0%, respectively, according to a survey done among Malaysian secondary and upper secondary students. According to the Center for Epidemiologic Studies Depression Scale (CES-D), a study conducted among Iranian female adolescents in Western Iran's secondary schools found that the overall prevalence of depression was 72.6%. Adolescents between the ages of 10 and 19 make up over 24% of the population in Nepal. Despite making up over 25% of Nepal's population, relatively little research has been done on the psychosocial issues that adolescents face. According to the National Mental Health Survey of Nepal 2020, one of these few studies, the prevalence of mental distress among teenagers (those aged 13 to 17) is 5.2%, and the rate of depression is comparable for males and females. In a similar vein, researchers found that one-fifth (17.03%) of 787 teenage pupils from 13 schools in Nepal's Hetauda Municipality experienced psychosocial disorder. According to a different study done in Biratnagar City, Nepal, 73% of high school students suffer from depression overall, with mild and severe depression rates of 59% and 14%, respectively. Additionally, a nationwide survey of 6531 secondary and upper secondary school students revealed that 10.33% of the pupils had attempted suicide and nearly 14% had suicidal thoughts. According to Sundas (2013), a survey conducted among Pokhara Metropolitan City undergraduate students revealed that 38.2% of them suffered from depression. Third only to heart and respiratory disorders, depression has become a prevalent health issue and a leading contributor to disability (Ibrahim, 2013). According to the Global Burden of Disease Study, one of the main factors contributing to disability-adjusted life years in 2020 may be unipolar severe depression (Murray, 2019). Depression is a significant health issue because of its prevalence and related effects. It is one of the most common and incapacitating mental illnesses, with a frequency of roughly 10-15% worldwide (Wijeratne, 2008). The World Health Organization's (WHO) prediction is that by 2020, depression would rank as the second most common cause of dysfunction. It is commonly known that psychological problems can result from stressful life situations. Furthermore, it has been proposed that the bulk of depressive

symptoms are preceded and even predicted by stressful life experiences. One of the most fundamental issues with human health is depression, a mood illness. It is a really serious problem that costs the governments a lot of money. Because depressed people have high rates of symptom recurrence and persistent functional impairment, depression is increasingly seen as a chronic condition (Rost, 1998). Since depression is a chronic disorder, the majority of depression treatment trials integrate chronic disease management concepts into the evaluated therapies. Compared to the general population, medical students were shown to have higher rates of psychiatric morbidity and depression (1416). According to a 2013 systemic analysis, the weighted mean prevalence of depression among medical students was 30.6%, with prevalence rates ranging from 10% to 85% [30]. Studies conducted between 2009 and 2014 found that between 22.2% and 48.2% of medical and university students in the United Arab Emirates, Saudi Arabia, and Oman suffered from depression. Depression, anxiety, and stress were found to be prevalent among medical undergraduate students, indicating a neglected aspect of the students' psychology that needs immediate treatment. To reduce this morbidity, counseling services for students must be made available and easily accessible.

An ailment that affects the body, mood, and thoughts is called a depressive disorder. It has an impact on how someone feels about themselves, how they think about things, and how they eat and sleep. Symptoms may last for weeks, months, or even years if therapy is not received. However, most persons with depression can benefit from appropriate treatment. It is commonly known that medical schools and colleges are stressful places that frequently have a detrimental impact on students' academic achievement, physical and mental health. Although it's unlikely that medical school is any different from other higher education in that regard, medical school is generally seen as stressful. Medical students have high rates of psychological morbidity, including symptoms of depression and anxiety (Eremsoy, 2005).

The study is aimed to determine the prevalence and severity along with age distribution of depression among medical students of Jalalabad city.

### Literature Review

#### Definition

Everybody gets depressed or blue sometimes, but these emotions are usually short-lived and go away in a few days. When someone has a depressive disorder, it affects their everyday life, their ability to operate normally, and it hurts them and people around them. The majority of people who suffer from depression require treatment in order to recover from this prevalent yet dangerous illness. (Nimh) Decreased energy (anergy), feelings of guilt or low self-worth, disturbed sleep and/or hunger, impaired attention, and anhedonia (lack of interest and pleasure) are all signs of depression (Marianne, 2007).

#### Types

A person with major depressive disorder, often known as major depression, has a number of symptoms that make it difficult for them to work, sleep, study, eat, and engage in formerly enjoyable activities. A person with serious depression is incapacitated and unable to function normally. A major depressive episode is more likely to occur frequently even though a person may only have one in their lifetime. The hallmark of dysthymic disorder, also called dysthymia, is milder symptoms that persist for two years or longer and may not incapacitate a person but may prevent them from feeling well or working normally. Dysthymia sufferers may also experience one or more major depressive episodes during their lifetime.

Psychotic depression, which occurs when a severe depressive illness is accompanied by some form of psychosis, such as a break with reality, hallucinations, and delusions.

If a new mother experiences a serious depressive episode within a month of giving birth, it is known as postpartum depression. After giving delivery, 10 to 15 percent of women are said to suffer from postpartum depression. The hallmark of seasonal affective disorder (SAD) is the beginning of a depressed illness in the winter, when sunlight is scarcer. Usually, the depression subsides in the spring and summer. Light therapy may be a useful treatment for SAD, although it is ineffective for over half of SAD sufferers. Psychotherapy

and antidepressant drugs, either by themselves or in conjunction with light treatment, can lessen the symptoms of SAD.

#### Clinical manifestation

Individuals with depressive disorders may not uniformly exhibit same symptoms. The intensity, occurrence, and duration of symptoms will differ based on the individual and their specific condition.

#### symptoms

symptoms: Prolonged feelings of sadness, anxiety, or "emptiness," as well as pessimism and/or hopelessness Feelings of powerlessness, remorse, and/or worthlessness Restlessness, irritation, loss of interest in once-pleasurable pastimes or activities, such as sex, weariness and a drop in energy, inability to focus, recall information, and make decisions, excessive sleeping, early morning wakefulness, or insomnia, Loss of appetite or overeating, Suicidal thoughts and attempts, headaches, cramps, stomach issues, or chronic aches and pains that don't go away after therapy.

#### Epidemiology

Depression is a condition that affects a person's mood. A person's physical and emotional wellbeing are both impacted by this illness. However, mental health is more affected. Previous research on depression has suggested that low levels of certain neurotransmitters, such as adrenaline, dopamine, and 5-HT, are the cause of the condition. According to recent research, depression is influenced by a number of additional important factors in addition to these. This is also influenced by neuroinflammation, neuronal density and volume, neural plasticity, or neurotropic influences. This disorder's epidemiology is growing, and between 1990 and 2017, it was among the top five diseases worldwide (James et al., 2018).

Several important facts about the epidemiology of depression (from "WHO | Depression and Other Common Mental Disorders," 2017) Around the world, 322 million people suffer from depression. South East Asia and the western Pacific region, which includes China and India, have higher rates of this condition. Women are more likely than men to suffer from depression. Just 3.6% of men and 5.1% of women suffer from this condition. It is more common in older adults and varies with age. Between the ages of 54 and 75, 5.5% of men and 7.5% of women suffer from this condition. Between 2005 and 2015, there was an 18.4% increase in depression (25) Over 120 million individuals worldwide suffer from depression, making it a prevalent condition. The lifetime prevalence of depression is between 10% and 15%, according to recent epidemiological investigations carried out in general populations. According to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) and the World Mental Health Organization (WMH), the 12-month prevalence of mood disorders ranges from 3% in Japan to over 9% in the United States. One Despite the fact that in practically every country, the likelihood of receiving treatment is correlated with the severity of the disease, in the 12 months before to the interview, 35.5% to 50.3% of significant cases in developed nations and 76.3% to 85.4% in less developed countries did not obtain therapy. The current depression rate (based on the Patient Health Questionnaire-8) was 9%, and the rate of people with a current major depression diagnosis (based on DSM-IV criteria) was 3.4%, according to the US Centers for Disease Control (CDC) 2006 and 2008 surveys of 235,067 adults from 45 states plus the District of Columbia, Puerto Rico, and US Virgin Islands. 2. One of the most frequently repeated findings in epidemiology is the high female:male sex ratio in the prevalence of depression, particularly during the reproductive years. 3 This conclusion—that roughly twice as many women worldwide experienced depression as men—was corroborated by French data from the European Study of the Epidemiology of Mental Disorders (ESEMED). With the exception of the 18–24 age group, when there was roughly parity between the sexes, this distribution held true throughout all age groups (Lépineun released data). In a recent examination of global surveys, the younger age group (18–34) likewise showed a lower classical female:male risk ratio for severe depressive disorder than other age groups. 4. According to these writers, the rise in female options in education, work, birth control, and other areas that promote gender equality may be the cause of the relative decline in the prevalence of depression in women. As this younger

cohort ages, it will be fascinating to observe whether the more balanced female:male sex ratio continues (Eremsoy, 2005).

#### Risk factors associated with depression

Depression is caused by a variety of circumstances. Depression is not linked to any one factor. Depression may result from a combination of social, biological, economic, cultural, and environmental causes. Biological factors: About one-third of depressed patients have this factor; in other situations, environmental or non-genetic variables may be involved. Depression may develop in a person who experienced trauma or injury as a youngster; this may be due to genetic causes. Depression and hereditary variables have a long-lasting link. Psychological factors: When a person is young, they may endure negative parental influence or maladaptive behavior. The child is taken from the mother. Depression may arise under these circumstances.

Social factors: It is a major factor in depression. Disturbing relationships may be a contributing factor to depression. It is one of the causes of depression in low- and middle-income nations, such as India. Cultural Factors: A person's religion, beliefs, and culture all have an impact on their mental health. These elements have an impact on an individual's lifestyle. It is better to comprehend depression in order to gain a deeper knowledge of it. Economic Aspects: Economic crises are a major contributor to depression because they cause people to suddenly fall into poverty. People who live in disaster-prone areas are more likely to experience depression.

Suicide: WHO gives global suicide statistics. In 2016, 800,000 people lost their lives to suicide, and many more attempted suicides but failed. Suicide is the second leading cause of death for young people aged 15 to 29 worldwide. Because men's suicide rates are over double those of women, men die at a higher rate than women. Suicide claims the lives of over 1.5% of people globally. Countries with low and moderate incomes account for more than half of all suicide deaths. "WHO | Depression and Other Common Mental Disorders," 10 Facts about Mental Health.

Non-communicable disease: One of India's biggest health problems is injuries and chronic conditions, such as diabetes, heart disease, cancer, and neurological diseases. These conditions can co-occur with depression. Between 22% and 33% of people with non-communicable diseases experience depression. There is a substantial correlation between depression and diabetes. Type 2 diabetes is over 60% more likely to occur in people with depression, and depression is made worse by diabetes. Additionally, depression raises the risk of cardiovascular disease. A person is more likely to experience depression if they have any kind of physical disease (Rost, 1998).

#### Findings of different studies

According to a study on the prevalence and contributing causes of depression in Cameron, 723 out of 800 questionnaires given to eligible participants were returned during the study period (response rate: 90.4%). 618 surveys in all were correctly completed and examined. The mean age of the participants was  $22.4 \pm 1.9$  years, with a range of 18 to 28 years. Males made up the majority of study participants (53.7%), as did clinical medical students (59.7%). About a third of them (30.6%, 95% CI: 22.8–36.7) were determined to have serious depressive disorder (PHQ Score > 10). pupils were categorized as having mild, moderate, moderately severe, and severe depression, respectively, with 214 (34.6%), 163 (26.4%), 21 (3.4%), and 5 (0.80%) pupils having the same severity. Marianne (2007).

The prevalence of co-morbid depression and anxiety was found to be 21.20% (16.35% to 26.05%) among 273 medical students chosen through a systematic sampling technique, while the prevalence of depression and anxiety was 51.30% (45.37% to 57.23%) and (30.1% 24.66% to 35.54%), respectively. According to multivariate analysis, anxiety was significantly correlated with being female [AOR 2.56, 95% CI (1.32, 4.95)], having poor/low social support [AOR 5.36, 95% CI (2.08, 13.76)], first-year educational level [AOR 12.06, 95% CI (2.18, 66.72)], and second-year educational level [AOR 8.99, 95% CI (1.67, 48.45)]. Medical students' depression was significantly correlated with their age [AOR 2.42, 95% CI (1.64, 9.22)], first-year

educational level [AOR 1.63, 95% CI (1.43, 6.26)], second-year educational level [AOR 1.39, 95% CI (1.17, 5.18)], and stressful life events [AOR 1.61, 95% CI (1.14, 2.76)]. According to the same survey, a startlingly high percentage of medical students experience anxiety (30.10%), depression (51.30%), and comorbid anxiety and depression (21.20%). Anxiety was found to be strongly associated with female sex, first and second year educational attainment, and having little or no social support. In contrast, depression was found to be significantly associated with younger age (18–21 years old), first and second year educational attainment, and experiencing one or more stressful life events within the previous six months. Medical students should be screened for anxiety and sadness. It is necessary to conduct further research on effective strategies for treating and preventing anxiety and depression in medical students. (Sidi, 2014).

According to an Oman study, a startlingly high percentage of medical students have anxiety (30.10%), depression (51.30%), and comorbid anxiety and depression (21.20%). Anxiety was found to be strongly associated with female sex, first and second year educational attainment, and having little or no social support. In contrast, depression was found to be significantly associated with younger age (18–21 years old), first and second year educational attainment, and experiencing one or more stressful life events within the previous six months. Medical students should be screened for anxiety and sadness. It is necessary to conduct more research on effective strategies for treating and preventing anxiety and depression among medical students (Michelle, 2008).

The gender distribution of the target population was identical to that of the 797 medical students who completed the questionnaire, with 74% of them being male. 95% of respondents responded overall. The pupils were 21.63  $\pm$  1.57 years old on average. Of the students, around half (48.2%) reported mild depression (20.7%), moderate depression (16.6%), or severe depression (10.9%) (Table 1). The average score on the BDI-II was 15 (SD  $\pm$  10.0). First- and second-year students had higher mean scores (M  $\pm$  19.0, SD  $\pm$  11.0; M  $\pm$  16.8, SD  $\pm$  9.4) than third-, fourth-, and fifth-year students (M  $\pm$  14.74, SD  $\pm$  8.8), M  $\pm$  11.8, SD  $\pm$  9.4, and M  $\pm$  12.9  $\pm$  10.2). Similarly, first-year students had the highest frequency of depression (64%) and second-year students (62%); fourth-year students had the lowest prevalence (33%). A statistically significant correlation was found between the study year and the degree of depression, with first- and second-year students experiencing more severe symptoms than senior students. 336 students in all took part, yielding an 88% response rate. 49.1% of students said they had symptoms of depression. Compared to third-year (34.4%) and fourth-year (37.2%) students, it was noticeably higher in first-year (59.3%) and second-year (65.6%) students (Singh, 2010).

According to the PHQ-9, the overall prevalence of major depressive disorder and depression with a preliminary diagnosis was 7.6% and 21.5%, respectively. Students' academic achievement and year of study were statistically significantly correlated with depression. The study revealed no significant correlation between the prevalence of depression and other characteristics, such as gender, self-reported past history of depression, family history of mental diseases, type of social support, family structure, number of siblings, and parental education. Additionally, it was noted that students were reluctant to seek treatment for signs of depression. Edméa (2016).

2,562 medical students from 20 different universities participated in this survey; 1,572 (61.4%) of them were female, and 990 (30.8%) were male. Of these, 52 students were disqualified due to incomplete responses. The bulk of them are Saudi and single (96.1% and 92.4%, respectively), with a mean age of 22.05 years. 84.2% of medical students live with their families, while 85.2% of students have never smoked. Students from every year took part in this study: 19.5% in year 1, 21.8% in year 2, 19.3% in year 3, 21% in year 4, and 18.4% in year 5 (Gabr, 2014).

555 out of 600 pupils, or 92.5% of the total, responded. Overall, 28.3% of people had depression (95% CI = 24.5%-32.1%). Among male students (31.6%) and solitary students (33.6%), the prevalence was noticeably higher. Students who reported only eating one meal a day were also significantly more likely to use stimulant pills, energy drinks, and other substances. Students with related medical conditions were

much more likely to have them, especially those with bronchial asthma (47.5%), hypertension (55%), and back pain (60%). The prevalence of depression among the students under study seems to be influenced by factors connected to sleep, with a higher frequency among those who reported sleeping less hours, taking sleeping pills, and spending more than two hours in bed before bed. (Radeef, 2014).

The study involved 279 students in total. The results showed that the attrition rate was 29% and the response rate was 71%. Participating in the study were 86 (30.8%) second-year students, 78 (28%) third-year students, 62 (22.2%) fourth-year students, and 53 (19%) final-year students. The pupils were  $21.4 \pm 1.41$  years old on average. There were 77 (27.6%) men and 202 (72.4%) women. Anxiety affected 133 students (47.7%) while depression affected 98 students (35.1%). These were concurrently detected in 68 students (24.37%). Of the students, 55 (19.7%) had mild symptoms of depression, 31 (11.1%) had moderate symptoms, and 12 (4.3%) had severe symptoms. However, 77 students (27.60%) had mild anxiety symptoms, 38 students (13.6%) had moderate anxiety symptoms, and 18 students (6.5%) had severe anxiety symptoms. With a frequency of 43% for depression and 61.6% for anxiety, both symptoms were more prevalent in second-year medical students (Hays, 1995).

### **Materials and Methods**

A cross sectional study was carried out in all 4 Medical universities in Nangarhar from Nov 2023 to Dec 2024. Diagnosis of depression, major depression and its associated factors were assessed using the 9-Item-Patient Health Questionnaire (PHQ-9) and a structured questionnaire respectively. We included 341 medical students among all medical students of four medical faculties which was 3500 students using <https://www.calculator.net/sample-size-calculator.html>, with a confidence level of 95% and margin of error of 5%.

#### **Objectives**

1. To assess severity of depression among medical students.
2. To assess most common age affected by different stages of depression.
3. To assess association between academic year of students and severity of depression.

#### **Inclusion criteria**

1. All medical students of faculties of medicine.

#### **Exclusion criteria**

1. Students who were not interested in this study.

This study was approved by research committee of Nangarhar medical faculty. And statistical analysis were performed using SPSS (Statistical package for social science).

### **Results**

From Nov 2023 to Dec 2024 a cross section questionnaire based study was performed among medical students of faculties of medicine in Nangarhar province, Jalalabad city and among all students of medical faculties (3500) a sample size of 341 were calculated and among them the severity of depression, common age of students mostly affected by different stages of depression and association between academic year and depression was assessed, and the results are as follow:

#### **Age**

In my study all participants were aged between 17 and 35 with a mean age of 23.5 and SD of 2.975, and the data is shown in table below:

Table 1. Age statistics

| Statistics | Age  |
|------------|------|
| Mean       | 23.5 |
| Median     | 23   |

|                |       |
|----------------|-------|
| Mode           | 23    |
| Std. Deviation | 2.975 |
| Minimum        | 17    |
| Maximum        | 35    |

### Age ranges

Among all 341 participants mostly affected age range by depression was between 17 years and 24 years, with frequency of 238 and percentage of 69.8. Data regarding different age ranges affected by depression is shown in Chart below:

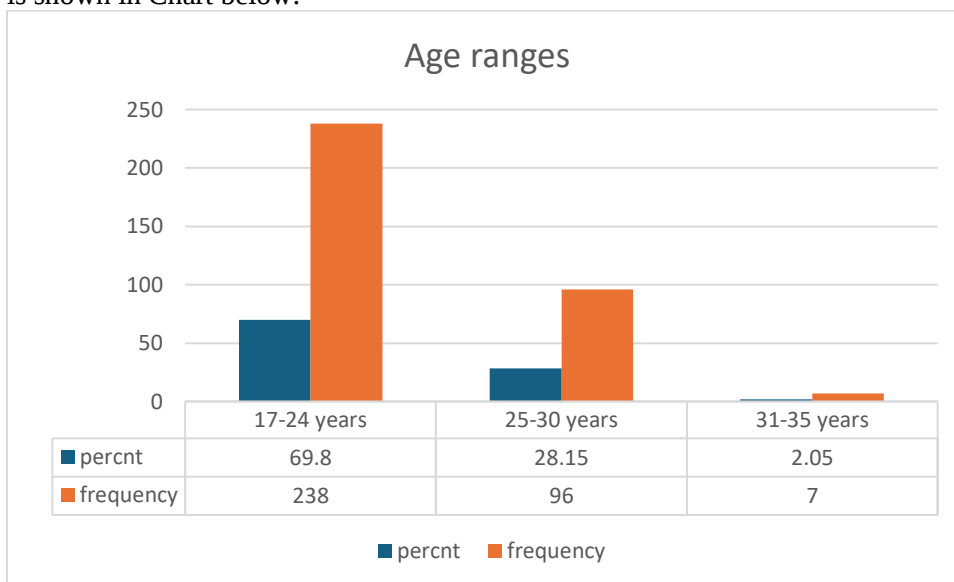


Chart 1. Age Ranges

### Severity of depression

Among all 341 participants 86 (25.2%) had mild depression, 69(20.2%) had minimal depression, 79(23.2%) had moderate depression, 82 (24%) had moderately severe depression and 25 (7.3%) had severe depression, and the data is shown in table below:

Table 2. Severity of Depression

| Severity of Depression | Frequency | Percent |
|------------------------|-----------|---------|
| Mild                   | 86        | 25.2    |
| Minimal                | 69        | 20.2    |
| Moderate               | 79        | 23.2    |
| Moderately severe      | 82        | 24      |
| Severe                 | 25        | 7.3     |
| Total                  | 341       | 100     |

### Association of academic year and depression

Third academic year had the most cases of depression 106(31.1%) and after third, fourth academic years students were mostly affected by Depression. Data regarding academic years and depression is shown in table below:

Table 3. Association of academic year and depression

| Academic Year | Frequency | Percent |
|---------------|-----------|---------|
| 1             | 40        | 11.7    |
| 2             | 57        | 16.7    |
| 3             | 106       | 31.1    |
| 4             | 88        | 25.8    |
| 5             | 23        | 6.7     |
| 6             | 27        | 7.9     |
| Total         | 341       | 100     |

### Severity of depression and academic year

Among all 341 students of different academic years, students of fourth year had the most cases of severe depression, meanwhile third class had the most cases of moderately severe depression. Data regarding severity of depression and academic year is shown in table below:

Table 4. Severity of Depression and academic year

|               |   | Severity of Depression |         |          |                   |        | Total |
|---------------|---|------------------------|---------|----------|-------------------|--------|-------|
|               |   | Mild                   | Minimal | Moderate | Moderately severe | Severe |       |
| Academic year | 1 | 11                     | 3       | 19       | 7                 | 0      | 40    |
|               | 2 | 18                     | 18      | 8        | 6                 | 7      | 57    |
|               | 3 | 22                     | 26      | 21       | 33                | 4      | 106   |
|               | 4 | 23                     | 1       | 23       | 31                | 10     | 88    |
|               | 5 | 7                      | 4       | 4        | 5                 | 3      | 23    |
|               | 6 | 5                      | 17      | 4        | 0                 | 1      | 27    |
| Total         |   | 86                     | 69      | 79       | 82                | 25     | 341   |

### Association of severity of depression and Age

The association between severity of depression and different ages of students is shown in table below:

Table 5. Severity of depression and Age

|     |    | Severity of Depression |         |          |                   |        | Total |
|-----|----|------------------------|---------|----------|-------------------|--------|-------|
|     |    | Mild                   | Minimal | Moderate | Moderately severe | Severe |       |
| Age | 17 | 1                      | 0       | 1        | 0                 | 0      | 2     |
|     | 18 | 4                      | 1       | 0        | 2                 | 0      | 7     |
|     | 19 | 3                      | 7       | 2        | 0                 | 2      | 14    |
|     | 20 | 10                     | 7       | 2        | 4                 | 0      | 23    |
|     | 21 | 11                     | 8       | 8        | 9                 | 1      | 37    |
|     | 22 | 9                      | 8       | 8        | 12                | 1      | 38    |
|     | 23 | 19                     | 11      | 18       | 21                | 5      | 74    |
|     | 24 | 9                      | 10      | 8        | 11                | 5      | 43    |

|       |    |    |    |    |    |    |     |
|-------|----|----|----|----|----|----|-----|
|       | 25 | 12 | 6  | 11 | 4  | 1  | 34  |
|       | 26 | 2  | 7  | 6  | 9  | 1  | 25  |
|       | 27 | 0  | 0  | 5  | 3  | 1  | 9   |
|       | 28 | 3  | 1  | 2  | 5  | 1  | 12  |
|       | 29 | 1  | 0  | 2  | 0  | 3  | 6   |
|       | 30 | 1  | 1  | 4  | 2  | 2  | 10  |
|       | 31 | 0  | 1  | 0  | 0  | 1  | 2   |
|       | 32 | 0  | 0  | 1  | 0  | 1  | 2   |
|       | 33 | 0  | 1  | 0  | 0  | 0  | 1   |
|       | 35 | 1  | 0  | 1  | 0  | 0  | 2   |
| Total |    | 86 | 69 | 79 | 82 | 25 | 341 |

### Discussion

Depression results from a chemical imbalance in the central nervous system. Although the actual mechanism is unknown, depressive episodes can be induced by sad or stressful life events, hormonal changes, illness, or specific drugs. People with low self-esteem and a negative attitude on life appear to be more susceptible to depression.

My study included 341 participants with a mean age of 23.5 and SD of 2.975 and minimum and maximum ages was 17 and 35 respectively. Similar study in Cameroon indicated the mean age 22.4 (Marianne, 2007). Another study by tabassum in Iran indicated the mean age of 21.4 (Hays, 1995). which means my study and both other studies indicate the same result.

In my study mostly affected age range by depression was between 17 and 24. Similar study in Oman by zakiya indicated the association of age 17 and 21 with depression (Michelle,2008). Study by nadir in Iran claimed the mean age 22. It means all studies indicate the same result.

In my study 86 (25.2%) had mild depression, 69(20.2%) had minimal depression, 79(23.2%) had moderate depression, 82 (24%) had moderately severe depression and 17.2% had severe depression (Aileen,2014). Both studies indicates the same result

Similar study by wafaa in Egypt indicated that among all students 32.6% had minimal depression, 22.3% had mild depression, 27.9% had moderate depression, and 25 (7.3%) had severe depression

My study indicated that depression was more prevalent among students of early academic years. Similar study by zakiya in Oman demonstrated the association of early academic years and depression (Michelle,2008). Nadir in Iran claimed the same thing that depression is in students of lower academic years (Ibrahim,2013).

In my study mostly affected age by depression was 23 years.

Similar study in Cameroon indicated that age around 22.4(Marianne,2007) Tabbasum in Iran had the same result of 21.4 (Hays,1995). My study and other studies indicate the same result.

The limitations of this study was potential response biases, reliance on self-reporting, interruption of participants was differentially and inability to clarify or probe further during data collection.

### Conclusions

Depression was more prevalent in younger age students. Most of the student had mild depression meanwhile moderately severe depression was in second position. Depression was more prevalent among students of fourth and third years. And twenty three was the age that was more affected by the depression. Findings of this study suggest more in-depth investigation of depression among medical students in Nangarhar. Furthermore, accurate studies have to be done to collect more data regarding depression and

treatment steps have to be taken find a good solution for depression among students in Nagarhar.

### **Recommendations**

1. Implement regular mental health screening in universities.
2. Establish counseling and psychological support centers in medical faculties.
3. Train faculty members to identify and support students with mental health issues.
4. Integrate stress management and coping skills into the medical curriculum.
5. Encourage extracurricular and recreational activities to reduce stress.

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### **Conflict of Interest**

The author declares that there are no conflicts of interest regarding the publication of this study.

### **Ethics Approval**

This study was reviewed and approved by the Research Committee of Nangarhar Medical Faculty before the commencement of data collection. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki. Participants' privacy and confidentiality were maintained throughout the research, and no personally identifiable information was collected.

### **Informed Consent**

Written or verbal informed consent (according to the approved study protocol) was obtained from all participants before enrollment in the study. Participation was entirely voluntary, and participants were informed of the study objectives, their right to decline participation, and their right to withdraw at any stage without any consequences.

### **Data Availability**

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request. The data are not publicly available to protect the privacy and confidentiality of the participants.

### **Author Contributions**

Dr. Ahmad Nangyalai Amiri: Conceived and designed the study; developed the research protocol and questionnaire; collected and analyzed the data; interpreted the findings; prepared the statistical analysis; drafted, revised, and finalized the manuscript.

Dr. Sayed Zekria Hashimi (Advisor): Provided academic supervision, methodological guidance, critical review of the manuscript, and overall supervision of the research process.

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