

**Original Article****Anxiety and Depression among Undergraduate Medical Students: A Cross Sectional Study**Amar Kumar Yadav <sup>1</sup>, Binod Kumar Yadav <sup>1</sup>, Rajesh Yadav <sup>2</sup>, Sai Bijay Rijal <sup>3</sup><sup>1</sup>Department of Community Medicine, <sup>2</sup>Department of Pharmacology, Nobel Medical College Teaching Hospital, Biratnagar, Nepal, <sup>3</sup>Department of Pharmacy, School of Medicine and Allied Health Sciences, Manmohan Technical University, Budiganga-4, Morang, NepalArticle Received: 25<sup>th</sup> June, 2025; Accepted: 27<sup>th</sup> July, 2025; Published: 31<sup>st</sup> July, 2025DOI: <https://doi.org/10.3126/jonmc.v14i1.83309>**Abstract****Background**

Anxiety and depression are prevalent mental health illness that can affect anyone but most common seen in the medical students. This study finds the prevalence and associated risk factor of anxiety and depression among the medical students.

**Materials and Methods**

A cross section descriptive study conducted among the 187 medical students of first and third year bachelor of medicine and bachelor of surgery enrolled in Nobel Medical College Teaching Hospital using Beck anxiety and depression inventory with questionnaire. Whole sampling was done and study conducted between May and June 2025.


**Results**

Prevalence of anxiety and depression was 29.6% (55) and 58.8% (110) respectively. The prevalence of anxiety in male was 12.9% (12) and depression 53.8% (50). Similarly, the prevalence of anxiety in female was 45.7% (43) and depression 63.8% (60) respectively.

**Conclusion**

This study finds the prevalence of anxiety and depression among the medical students who study bachelor of medicine and bachelor of surgery. The prevalence of anxiety and depression were more in female, those students with insufficient pocket money and substance abuse.

**Keywords:** Anxiety, Depression, Medical students

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## Introduction

Depression, often known as depressive disorder, is a prevalent mental health illness that can affect anyone. Long-term poor moods, a loss of enjoyment, or disinterest in activities are its defining characteristics. A complex interplay of social, psychological, and biological elements leads to depression. Depression can also be brought on by issues at work and school [1].

In 2019, 301 million people worldwide suffered from anxiety disorders, making them the most prevalent mental illnesses. Extreme and excessive fear and worry are common among people with anxiety disorders. Usually, bodily tension and additional behavioral and cognitive signs accompany these emotions. They can persist for a long period if left untreated, are hard to manage, and cause a great deal of distress. Anxiety disorders can affect a person's family, social life, education, and career in addition to interfering with everyday activities [2].

The prevalence of anxiety and depression in Nepal among medical students was 58.44% and 46.43% respectively [3]. One in six adults will experience depression at some point in their lives. Approximately 16 million adult Americans suffer from depression each year [4]. In Nepalgunj medical college and teaching hospital the prevalence of anxiety and depression was 70.41% and 25.9% respectively [5, 6].

The community's levels of stress, anxiety, and depression are seen as crucial markers of mental health. Unfortunately, if these emotional problems are not identified and treated, psychological morbidity will rise and have unfavorable effects on their lives and careers [7].

## Materials and Methods

A descriptive cross-sectional study was conducted in May/June 2025 with whole sampling method. Students enrolled in the first and third years of the Nobel Medical College Teaching Hospital's bachelor of medicine and bachelor of surgery programs participated in the study. Ethical approval for the study obtained from the Institutional Review Committee of Nobel Medical College Teaching Hospital Biratnagar (reference No 26/2025). The students' anxiety and depres-

sion levels were assessed using Beck's inventory questionnaire. Score of 0-21 low anxiety, 22-35 moderate anxiety and 36 and above potentially concerning levels of anxiety [8].

Score 1-10 Normal, 11-16 Mild mood disturbance, 17-20 Borderline clinical depression 21-30 Moderate depression, 31-40 severe depression, over 40 Extreme depressions [9].

Students were given a set of questionnaires to complete, and they were interviewed, using a weighing machine and stadiometer to determine their weight and height, respectively. There were 200 total students in first and third year MBBS. In this study the total students participate were 187. The respondent rate was 93.5%.

The sample size calculation done by using  $n = Z^2 pq / e^2$   
 $= (1.96)^2 \times 0.733 \times 0.267 / (0.0733)^2$   
 $= 140$

Where,

n= minimum sample size

Z= 1.96 at 95% Confidence Interval (CI)

p= prevalence taken as 73.3% for maximum sample size (previous study by Bhattarai et. al. in Kist Medical College) [16].

q= (1-p)

e= margin of error, 10%

The data was collected and entered in excel and analyzed in statistical package of social statistics 27.

## Results

Among total 187 participant, 94(50.3%) were female and 93(49.7%) were male in this study.

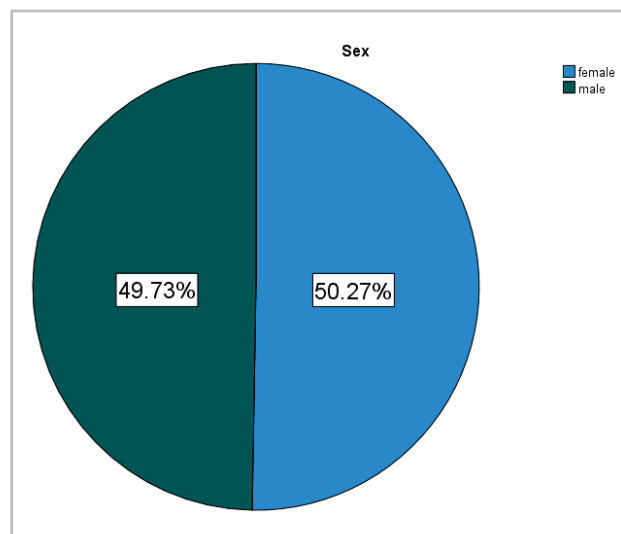


Figure 1: Pie chart showing the demography of sex.



**Table 1: showing the anxiety and depression status according to sex**

Anxiety	Male N(%)	Female N(%)	Total N(%)	P value
Low anxiety	81(87.1)	51(54.3)	132(70.6)	<0.001
Moderate anxiety	7(7.5)	27(28.7)	34(18.4)	
Potential concerning level	5(5.4)	16(17)	21(11.2)	
Total	93(100)	94(100)	187(100)	
<b>Depression</b>				
Normal	43(46.2)	34(36.2)	77(41.2)	<0.05
Mild mood disturbance	25(26.9)	22(23.4)	47(25.1)	
Borderline clinical depression	5(5.4)	14(14.9)	19(10.2)	
Moderate depression	16(17.2)	13(13.8)	29(15.5)	
Severe depression	4(4.3)	11(11.7)	15(8)	
Total	93(100)	94(100)	187(100)	

Prevalence of anxiety was 29.6% (55) and depression were 58.8% (110) in our study. The prevalence of anxiety in male was 12.9% (12) and depression 53.8% (50) respectively. Similarly, the prevalence of anxiety in female was 45.7% (43) and depression 63.8% (60) respectively.

Moderate anxiety and potential concerning level of anxiety were 27(28.7%) and 16(17%) respectively in female which was more than 7(7.5%) and 5(5.4%) respectively in male. Similarly severe depression was also more in female 11(11.7%) than male 4(4.3%) which was significant with p value less than 0.05 as shown in table 1.

**Table 2: anxiety and depression in relation with pocket money**

Pocket money Anxiety	Adequate N(%)	Inadequate N(%)	Total N(%)	P value
Low anxiety	103(74.6)	29(59.2)	132(70.6)	<0.086
Moderate anxiety	23(16.7)	11(22.4)	34(18.2)	
Potential concerning level	12(8.7)	9(18.4)	21(11.2)	
Total	138(100)	49(100)	187(100)	
<b>Depression</b>				
Normal	61(44.2)	16(32.7)	77(41.2)	<0.03
Mild mood disturbance	38(27.5)	9(18.4)	47(25.1)	
Borderline clinical depression	14(10.1)	5(10.2)	19(10.2)	
Moderate depression	18(13)	11(22.4)	29(15.5)	
Severe depression	7(5.1)	8(16.3)	15(8)	
Total	138(100)	49(100)	187(100)	

High Potential concerning level of anxiety was seen 12(8.7%) in the student who have adequate pocket money while severe depression seen

8(16.3%) in the student who had inadequate pocket money.

**Table 3: comparison of anxiety and depression with substance abuse**

Substance abuse Anxiety	Yes N(%)	No N(%)	Total N(%)	P value
Low anxiety	43(71.7)	89(70.1)	132(70.6)	<0.027
Moderate anxiety	6(10)	28(22)	34(18.2)	
Potential concerning level	11(18.3)	10(7.9)	21(11.2)	
Total	60(100)	127(100)	187(100)	
<b>Depression</b>				
Normal	23(38.3)	54(42.5)	77(41.2)	<0.34
Mild mood disturbance	16(26.7)	31(24.4)	47(25.1)	
Borderline clinical depression	3(5)	16(12.6)	19(10.2)	
Moderate depression	11(18.3)	18(14.2)	29(15.5)	
Severe depression	7(11.7)	8(6.3)	15(8)	
Total	60(100)	127(100)	187(100)	

Substance abuse causes 11(18.3%) of potential concerning level of anxiety more than those who had no substance abuse 10 (7.9%) and 7(11.7%) severe depression more than no substance abuse 8 (6.3%) in this study.

## Discussion

In this study, the Prevalence of anxiety was 29.6% (55) and depression was 58.8% (110). In our study, we found that the moderate anxiety was 18.4% and potential concerning level of anxiety was 11.2% similarly moderate depression was 15.5% and severe depression was 8% The study conducted by Sah et al [10] in Nepal Medical College and Teaching Hospital Kathmandu found that the prevalence of anxiety 59.3% higher than our study and depression 44% lower than our study. Among them moderate anxiety was 36.3% and severe anxiety was 23.1%. Which was higher than our study. Another similar study done by Mandyam et al at SVIMS Sri Padmavathi Medical College for Women Tirupati, India found that the moderate anxiety was 17% and severe anxiety was 13.6% similar to our study similarly they were also found that the moderate depression was 12.2% and severe depression was 5.8% both moderate depression and severe depression were slightly lower than our study [17].

The study done by Yadav et.al in Nepalganj Medical college and teaching Hospital found that, anxiety in undergraduate students were 70.4% in which anxiety in males were 53.6% and anxiety in female were 46.4% [5] whereas in our



study, we found the prevalence of anxiety were 29.6%. Which was lower than the study done by Yadav et. Al in Nepalgunj Medical College and teaching Hospital. Among them, female had higher anxiety than males 46.7% and 12.9% respectively. Most of the study shows that anxiety in females was higher than males.

Our study found that the prevalence of depression was 58.8% among medical students in Nobel Medical College Teaching Hospital, among them moderate and severe depression was 15.5% and 8% respectively. Similar study was conducted at Nepalgunj Medical College and teaching hospital by Yadav et.al found that the prevalence of depression was 25.9% [6] which was less than our study among them moderate and severe depression were 11.6% and 3.6% . This shows there is increasing trend this might be due to difference study period and different batches of undergraduate groups. Other similar study done by Yadav et al [11] in Jhansi, Uttar Pradesh, India the prevalence of depression was 57% which suggest our study while anxiety was found (71%) among medical students. In this study, the prevalence of depression was similar to our study while the prevalence of anxiety was found more than our study.

In this study, those students who had inadequate pocket money showed more anxiety 40.8% (20) than adequate pocket money 25.4% (35). Similarly high depression seen in those students who had inadequate pocket money 67.3% (23) than adequate pocket money 55.7% (77). According to the study done by Ahmed et al [12] among Jimma university students Ethiopia, they found less pocket money less depression. The result was found opposite to our study. Another similar study done by Abed et. Al. in Egypt also suggests our study that the students with less pocket money more anxiety and depression [14]. Substance abuse causes 11(18.3%) of potential concerning level of anxiety more than those who had no substance abuse 10 (7.9%) and 7(11.7%) severe depression more than no substance abuse 8 (6.3%) in this study. Our study consistent the study done by Yadav et al [11] Similar study done by Pokhrel et al [13] in Nepal also suggest that high prevalence of depression 31.9% seen in the students who had habit of substance abuse but anxiety prevalence was more in the students who had not the habit of any types of substance use 48.2%. Another similar study done by chakraborty et.al in Kolkata, West Bengal, India also found that the students who had habit of substance use had more prevalence of anxiety and depression [15].

## Conclusion

In our study, we found the prevalence of depression was 58.8% slightly higher than the similar study. Similarly, we found anxiety was 29.6% lower than the similar study.

## Recommendation

We recommend the parents, academy authorities and government to address the risk factor associated with anxiety and depression to the medical students. There should be screening program for all the medical students.

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**Conflict of interest:** None.

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