Original Article

Depression and Anxiety among Undergraduate Students in a Medical College of Rupandehi

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ABSTRACT

Background
Depression and anxiety being the common health problems globally, are found highly prevalent among medical students. This study aimed to assess prevalence of depression and anxiety and its associated factors among undergraduate students.
Methods
A descriptive cross-sectional study was conducted to assess depression and anxiety among undergraduate students of a medical college in Rupandehi using a convenience sampling technique. Self-administered questionnaire and DASS 21 scale were used to collect the data from date 20th August 2022- 20th August 2023 and data were analyzed by using descriptive and inferential statistics with Statistical Package for Social (SPSS) 20.
Results
The findings of the study revealed that 33.2% of the respondents had depression and 50.4% had anxiety. There was statistically significant association between age, pressure from parents, year of study, medical condition and stage of course and depression. Similarly, age, year of study and stage of course were significantly associated with anxiety.
Conclusion
Based on the study findings, it is concluded that one third of the respondents have depression and more than half of the respondents have anxiety. This study emphasizes on developing strategies to identify students at risk and implementing specific coping mechanisms-such as exercising, socializing, and healthy eating-while promoting health seeking behaviors through improved mental health literacy.
Keywords: anxiety, depression, medical students

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INTRODUCTION

Globally, people with depression were estimated to exceed 300 million in 2015, equivalent to 4.3% of the world's population. Depression can lead to suicide; over 800 000 people die due to suicide every year, being second leading cause of death in 15-29-year-olds.[1] Students are encountered with a variety of academic, emotional, behavioral, economic, sexual, and social issues.[2] So, most of the college and university students, especially suffer from depression [3] as they are handling with the various academic and social needs for their professional careers.[4]

Anxiety is an emotion characterized by feelings of tension, worried thoughts, and physical changes like increased blood pressure [5]. Anxiety disorders are world's most common mental disorders, affecting 301 million people in 2019. An estimated 4% of the global population currently experience an anxiety disorder.[6] According to some research it is found students belonging to the lower socioeconomic class have a higher rate of depression.[7] Anxiety and depression is more common among universities students than in general population,[8] especially medical students.[9]

Depression is a mental health issue found more among medical students worldwide due to the high intensity of training [10] and is indicated that anxiety and depression are highly prevalent among medical professions in comparison to the general population.[11] Among medical student's poor mental health has been reported from several parts of globe especially Asia including India [12] and Pakistan [13]. Research studies from various parts of the world showed higher prevalence of depression within the medical [14]. In Nepal, the burden of anxiety and mood disorders within the medical students found to be high with a prevalence of anxiety and depression 35–45% and 29–31% respectively. Depression and anxiety have conceptual and theoretical similarities and sometimes overlapping, especially in the young generation [15].

Medical education is perceived as stressful and considerable degree of psychological morbidity among medical students [16]. Having physician parent is found to be a positive factor for anxiety in contrast with depression [17] and are more found to develop social and affective coping skills [18].
In developing countries like Nepal, medical field is viewed upon as a career and also as an opportunity for social advancement [19]. The prevalence of depression in Nepalese medical students was found to be around 30%. The mental health understanding among medical students will encourage development and integration of student's wellness programs to prevent bad outcome [20].

This study is carried out to determine the prevalence of depression and anxiety in the MBBS students. As medical course, students study a lot of course contents and have to utilize that information into practical. So, medical students have less time to relax which leads to serious sleep deprivation, impaired judgment, loss of self-esteem, reduced concentration, along with anxiety and depression. Thus, the study aims to bridge the gap as there are only few studies conducted in among medical students in Nepal.

METHODS

Descriptive cross-sectional study design was conducted to assess depression and anxiety among undergraduate students of Universal College of Medical Sciences (UCMS) of Rupandehi, from 9th Oct 2022-17th April 2023. Sample size was 355 undergraduate medical students studying in 1st, 2nd, 3rd and 4th year MBBS which was determined using Cochran's formula taking the prevalence of depression (29.9%). Convenience sampling technique was used to select the sample. Respondents were assured for anonymity. Researcher herself collected the data by using self-administered questionnaire and Depression, Anxiety and Stress Scale-21 (DASS-21). Researcher reached to college of respondents and introduced herself. The respondents were allowed to discontinue from the study at any time if they wished. The duration for the completion of tool was 30-45 minutes. Pre testing of the instrument was conducted among 10% of the total sample size. Medical students who have spent more than 6 months in the college, willing to participate in the study and who will be present on the day of data collection. Medical students who reported presence of physical illness at the time of survey were excluded.
The research instrument consisted of two parts. Self-administered questionnaire was used for part I and DASS-21 scale was used for part II. In the DASS-21 there are seven items for depression, anxiety, and stress. The depression levels of respondents are categorized as normal (0–9), mild (10–13), moderate (14–20), severe (21–27), and extremely severe (28 and more); anxiety levels are classified as normal (0–7), mild (8–9), moderate (10–14), severe (15–19), and extremely severe (20 and above) and stress is broken down as normal (0–14), mild (15–18), moderate (19–25), severe (26–33), and extremely severe (34+).[21]

Research proposal approval was obtained from the research committee of Universal College of Medical Sciences (UCMS). Ethical approval was obtained from

Institutional Review Committee from Universal College of Medical Sciences on 14th August, 2022. Administrative approval was obtained from authority of UCMS. Written informed consent was obtained from each respondent by clarifying the objectives of the study. The collected data was analyzed by using descriptive and inferential statistics with SPSS version 20.

RESULTS

Table 1 shows in total of 355 students,72.1% were from age group 21-25 years. Among which 58.3% were male. Similarly, 89.0% did not have medical disease at present. Among total participants, 25.1% from first year, 19.7% from second year, 22.5% from third year and 32.7% from fourth year and only 92.4% had no pressure from parents, 92.7% had no family history of mental illness and majority of participants 89.9% were concerned about future.

The prevalence of depression was 33.2% where, 15.5% students had moderate and 3.45 had severe depression (Table 2).

The prevalence of anxiety was 50.4% where, 18% students had moderate and 8.7% had severe anxiety (Table 3).

Table 4 reveals assessment of the multivariate association, researcher performed the logistic regression analysis. Using age, sex, pressure from parents, year of study, medical condition and stage of course as the independent variables, we measured their association with depression. Depression was associated with age ≤20 years (OR 4.923, 95% CI 1.548-15.659, p=0.007), pressure from parents (OR 2.731, 95% CI 1.234- 6.041, p=0.013), highly associated with 1st year of study (OR 18.973, 95% CI 8.251- 43.630, p=0.000), medical condition (OR 2.082, 95% CI 1.064- 4.075, p=0.032) and stage of course (OR 3.550, 95% CI 2.232- 5.645, p=0.000). However, there was no association between depression and gender.

Table 1: Respondents' Socio demographic Variables n=355

Characteristics	Number	Percent
Gender		
Male	207	58.3
Female	148	41.7
Age in years		
≤ 20	71	20
21-25	256	72.1
>25	28	7.9
Mean age±SD=22.32±2.324		
Pressure from parents		
Yes	27	7.6
No	328	92.4
Family history of mental illness		
Yes	26	7.3
No	329	92.7
Concerned about future		
Yes	319	89.9
No	36	10.1
Stage of course		
1st half	159	44.8
2nd half	196	55.2
Any medical disease at present		
Yes	39	11.0
No	316	89.0
Year of study		
1st year	89	25.1
2nd year	70	19.7
3rd year	80	22.5
4th year	116	32.7

Table 2: Prevalence and Level of Depression

Variables	Number	Percent
Prevalence (n=355)		
Depression	118	33.2
Level (n=118)		
Mild	34	9.6
Moderate	55	15.5
Severe	12	3.4
Extremely severe	17	4.8

Table 3: Prevalence and Level of Anxiety

Variables	Number	Percent
Prevalence (n=355)		
Anxiety	179	50.4
Level (n=179)		
Mild	47	13.2
Moderate	64	18.0
Severe	31	8.7
Extremely severe	37	10.4

Table 4: Association between Socio-Demographic Variables and Depression

Variables	Prevalence		*p*- value	Odds Ratio	95% CI for odd value	
	Yes (%)	No (%)			Lower	Upper
Age in years						
≤20	39(54.9)	32(45.1)	**0.007**	4.923	1.548	15.659
21-25	174(68)	82(32)	0.062	2.828	0.950	8.415
>25	24(85.7)	4(14.3)				
Gender						
Male	141(68.1)	66(31.9)	0.522	0.864	0.553	1.350
Female	96(64.9)	52(35.1)				
Pressure from parents	12(44.4)	15(55.6)	**0.013**	2.731	1.234	6.041
	225(68.6)	103(31.4)				
Years of study						
1st year	37(41.6)	52(58.4)	**0.000**	18.973	8.251	43.630
2nd year	45(64.3)	25(35.7)	0.000	7.5	3.146	17.880
3rd year	47(58.8)	33(41.2)	0.000	9.479	4.072	22.065
4th year	108(93.1)	8(6.9)				
Any medical disease	20(51.3)	19(48.7)	**0.032**	2.082	1.064	4.075
	217(68.7)	99(31.3)				
Stage of course						
1st half	82(51.6)	77(48.4)	**0.000**	3.550	2.232	5.645
2nd half	155(79.1)	41(20.9)				

Table 5 reveals assessment of the multivariate association, researcher performed the logistic regression analysis. Using age, sex, pressure from parents, year of study, medical condition and stage of course as the independent variables, we measured their association with anxiety. Anxiety was associated with age (OR 7.650, 95% CI 2.816-20.786, p=0.000), years of study (OR 15.742, 95% CI 7.916- 31.303, p=0.000), and stage of course (OR 3.550, 95% CI 2.232- 5.645, p=0.000). However, there was no association between anxiety and gender, pressure from parents and medical condition.

Table 5: Association between Socio-Demographic Variables and Anxiety

Variables	Prevalence		*p*-value	Odds Ratio	95% CI for odd value	
	Yes (%)	No (%)			Lower	Upper
Age in years						
≤20	20(28.2)	51(71.8)	0.001	7.650	2.816	20.786
21-25	135(52.7)	121(47.3)	0.029	2.689	1.104	6.647
>25	21(75.0)	7(25.0)				
Gender						
Male	110(53.6)	96(46.4)	0.072	0.677	0.443	1.035
Female	65(43.9)	83(56.1)				
Pressure from parents	10(37.0)	17(63.0)	0.180	1.742	0.775	3.918
	166(50.6)	162(49.4)				
Years of study						
1st year	19(21.3)	70(78.7)	0.001	15.742	7.916	31.303
2nd year	30(42.9)	40(57.1)	0.001	5.697	2.936	11.056
3rd year	33(41.2)	47(58.8)	0.001	6.085	3.199	11.577
4th year	94(81.0)	22(19.0)				
Any medical disease	15(38.5)	24(61.5)	0.144	1.662	0.612	3.076
	161(50.9)	155(49.1)				
Stage of course						
1st half	46(30.8)	110(69.2)	0.001	4.132	2.644	6.457
2nd half	127(64.8)	69(35.2)				

DISCUSSION

This study was conducted to assess the prevalence of depression and anxiety among undergraduate medical students. The prevalence is slightly higher, and similar findings are observed in different studies around the world. In the present study, 33.2% and 50.4% of the respondents had depression and anxiety, respectively, which is consistent with the study conducted in Pakistan, showing that 35.1 % and 47.7 % of medical students had depression and anxiety, respectively [22]. Almost similar results were recorded in another study done by Tabalipa et al. where the prevalence of depression was 32.8% (95% CI 27.2, 38.4) [19]. Moreover, a study done by Konar et al. showed almost results, with a prevalence of depression and anxiety at 34.04% and 48.94%, respectively [23]. Another study conducted by Chakraborty et al reported percentages of depression and anxiety at 45.3% and 52.4%, respectively [24]. The high results could be attributed to the assessment methods, grading criteria, cutoff points for evaluating depression, and variations in sample size used in the study. The present study showed that the majority had moderate level of depression and anxiety which was at 15.5% and 18%, respectively. Another study showed similar results where a majority had moderate level of depression and anxiety conducted in India [25,26]. In contrast, another study showed a prevalence of 11.1% and 13.6% for a moderate level of depression and anxiety, respectively [22]. The findings showed that the prevalence of depression in males was slightly higher than females which is similar to the study conducted in Puducherry, Coastal South India [27]. In contrast, another study conducted by Tareq et al found that depression was more prevalent among female students than male students [28]. Similar results were reported in another study conducted in Nepal [20]. Higher prevalence might be due to personality traits, gender inequality and associated stigma [29] The present study also shows that a higher prevalence of depression and anxiety in 2nd-year students. Another study carried out by Kumar et al. also concluded similar results, with a prevalence of depression being

higher in 2nd-year students [27]. In contrast, another study showed results that were not similar to the study in Dhaka, Bangladesh, which found a higher proportion in 1st-year students as compared to the other years [30].

The study findings revealed that there was a statistically significant association between depression and age ≤20 years (p=0.007) and anxiety and age ≤20 years (p=0.001). In contrast, a statistically insignificant association was found with age in a study conducted by Tabalipa et al. in a Brazilian university. The same study conducted in a Brazilian university showed a strong association between pressure from parents and anxiety (p = 0.029) and depression (p = 0.008) which is consistent with depression (p=0.013) but inconsistent with anxiety (p=0.180) [19].

The findings of the study showed that there is a statistically significant association between medical conditions (p=0.032) and depression. Consecutively, the study revealed that there is a statistically significant association between depression and the stage of the course (p=0.001). In addition, the findings also revealed that there is no statistically significant association between medical conditions and anxiety (p=0.144), but in contrast, a study done by Taneja et al. concluded that a significant association was seen between anxiety and medical conditions [31]. However, there is a statistically significant association between anxiety and the stage of the course (p=0.001).

CONCLUSION

The study concluded that one third of the respondents have depression and more than half of the respondents have anxiety. Age, pressure from parents, year of study, medical condition and stage of course were found to be significantly associated with depression. Similarly, age, year of study and stage of course were significantly associated with anxiety. This study emphasizes on developing strategies that identify students at risk and implement coping strategies like exercising, socializing and eating healthy and health seeking behavior by working on mental health literacy.

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Author contributions

GV, NS, MD, NT reviewed the literature, conceptualized and designed the research, GV, NS did data collection, GV, NS did data analysis, GV, NS did data interpretation, prepare result, GV, NS, MD drafted the manuscript and all authors reviewed the manuscript and approved the final version of the manuscript. All authors agreed to be accountable for all aspects of the research work.

Ethical approval

The approval for this research was obtained from the Universal College of Medical Sciences (UCMS) for ethical clearance.

Data availability statement

The data that supports the findings of this study are available as a part of this paper.

Conflicts of interest

The authors declare that they have no competing interests. The authors declare no conflicts of interest.

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LAYMAN SUMMARY

Depression is a common illness characterized by persistent sadness and a loss of interest in activities that one normally enjoys, accompanied by an inability to carry out daily activities, for at least two weeks. Anxiety is an emotion characterized by feelings of tension, worried thoughts, and physical changes like increased blood pressure. This research indicates that anxiety and depression are more prevalent in medical professionals compared to the general population. In Nepal, the prevalence of anxiety and mood disorders among medical students is notably high, with rates of 35-45% for anxiety and 29-31% for depression. This study aimed to assess the prevalence of depression and anxiety among MBBS students using a self-administered questionnaire and the DASS scale. The results revealed that 33.2% of medical students experienced depression, while 50.4% experienced anxiety. The study also found that moderate levels of depression and anxiety were present in 15.5% and 18% of students, respectively. A higher prevalence of depression (64.3%) and anxiety (42.9%) was observed among second-year students. No significant association was found between gender and depression or between anxiety and gender, parental pressure, or any medical conditions.

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