ORIGINAL ARTICLE

Prevalence of Psychological Co-morbidities among medical and dental students of a Medical University of Nepal

Sapkota N[1], Baral B[2], Bhagat U[2], Agrawal D[2], Baral DD[3], Pudasaini G[2]

1. Additional Professor, Dept. of Psychiatry, BPKIHS, Dharan, Nepal 2. Ex Intern, BPKIHS, Dharan, Nepal 3. Assistant Professor, SPH & CM, BPKIHS, Dharan, Nepal

*E-mail *Corresponding author :* sapkotanidesh@gmail.com

Abstract

Introduction: *Medical and Dental students are vulnerable to higher levels of Psychological distress than other age matched peers. This study was carried to identify prevalence of depression and anxiety in medical and dental students.*

Material And Method: *A cross sectional study was done among medical and dental students (2nd year to interns) of BPKIHS. A total of 600 students were enrolled through systematic random sampling and 588 (98%) responded. Semi-structured questionnaire was used to record socio-demographic variables along with Becks Depression Inventory(BDI) and Becks Anxiety Inventory(BAI).*

Results: *The mean age of participants was 22±2years among which 61.2%(360) were male, 69.7%(410) were from medical faculty, 90.5%(532) were Nepalese and 9.5%(56) were Indians. Depressive symptoms was recorded in 25.3%(149) out of which 12.6%(74), 6.5%(38), 5.3%(31), 0.5%(3), 0.5%(3) had mild, borderline, moderate, severe and extreme depressive symptoms respectively. Similarly anxiety was recorded among 7.8%(46) students with 42 having moderate and 4 having severe anxiety symptoms. Among the participants 6.3%(37) had suicidal thoughts and 4(0.7%) of them had suicide attempt in last one year.*

Conclusion: *Medical and dental students showed high prevalence of anxiety and depression even with suicidal thoughts including past attempt.*

Keywords: Depression, Anxiety, Medical Students, BDI, BAI

INTRODUCTION

Medical science and seeking medical field as the future career is one of the most preferred subject among brilliant youngsters. Many years of dedication, hard work and with lots of enthusiasm and hope they enter this field as medical or dental students. They have to move away from their comfort zone, have to get used to with compact schedules for theory and practical exposures along with frequent formative and summative assessment. All these changes in their life along with relationship issues makes them more vulnerable to psychological distress than their peers in other disciplines. They are likely to have mental stress more hence common Psychiatric entities like depression and Anxiety disorder. There are studies that reveals medical students have been found to experience higher levels of depression and anxiety compared to the general population and to their same age peers.[1,2] Several studies suggest a high prevalence of depression and anxiety among medical students with levels of overall psychological distress consistently higher than in the general population and age matched peers.[1,3] Medical students report higher rates of burnout[2] and depressive symptoms associated with suicidal ideation, suicide[1,4,5] and impaired quality of life than age-matched populations. Studies of medical students have identified that male students experience more depression and anxiety compared to female students.[6,7] In a study done in medical undergraduates of Nepal, psychological morbidity was found to be 21% and higher among students of basic sciences, Indian nationality and whose parents were medical doctors. The most common stress were related to academic and psychological concerns.[8]

Sapkota N et al. Prevalence Of Psychological…..

MATERIAL AND METHOD

This cross sectional study was conducted among medical and dental students of 2nd year to intern at B.P Koirala Institute of Health Sciences Dharan which is a medical University in Nepal. A total of 600 standard questionnaires were distributed among which 588 responded. Students from MBBS and BDS enrolled were 410 and 178 respectively. Total population proportionate method was used to allocate the number of sample for each year, gender and students from faculty of medicine and dentistry individually. Systematic random sampling was used to allocate the sample unit. Informed consent was taken from the students. The participants were given questionnaires which included socio-demographic variables, Beck's Depression Inventory (BDI), Beck's Anxiety Inventory (BAI) and question regarding suicide thoughts and/or attempts in last 1 year.

Master chart and coding list was prepared before entering the data and then the collected data was entered into computer through Microsoft Excel software and converted into SPSS for statistical analysis.

RESULT

The mean age of participants was 22±2years, 61.2%(360) were male, and 69.7%(410) were from MBBS faculty and 30.3%(178) were from BDS. Among them 90.5%(532) were Nepalese and 9.5%(56) were Indians.

Table 1: Characteristics of Participants

Characteristics		Number of participants	Percentage (%)
Gender	Male	360	61.2
	Female	228	38.8
Education	MBBS	410	69.7
	BDS	178	30.3
Nation	Nepal	532	90.5
	India	56	9.5
Year of study(including MBBS and BDS)	Second	141	24
	Third	134	22.8
	Fourth	88	15
	Fifth	110	18.7
	Intern	115	19.6
Total		588	100

Prevalence of Psychological morbidities:

Depressive symptoms was recorded in 25.3%(149) out of which 12.6%(74), 6.5%(38), 5.3%(31), 0.5%(3), 0.5%(3) had mild, borderline,

moderate, severe and extreme depressive symptoms respectively. Similarly anxiety was recorded among 7.8%(46) students with 42 having moderate and 4 having severe anxiety symptoms(table 2). Among the participants 6.3%(37) had suicidal thoughts and 4(0.7%) of them had suicide attempt in last one year.

According to Becks Inventory Screening for Depression shows person above borderline depression needs to seek medical attention which includes 75 (12.8%) of the medical and dental students need to get medical attention.

Table 2 : Distribution Of Different Categories of Depression and Anxiety

Category of Depression	Number of participants	Percentage (%)
Normal	439	74.7
Mild depression	74	12.6
Borderline depression	38	6.5
Moderate depression	31	5.3
Severe depression	3	0.5
Extreme depression	3	0.5
Total	**588**	**100**
Suicidal thoughts	**37**	**6.3%**
Attempted suicide in last one year	**4**	**0.7%**
Category of Anxiety	**Number of participants**	**Percentage (%)**
Normal	542	92.2
Moderate anxiety	42	7.1
Severe anxiety	4	0.7
Total	**588**	**100.0**

DISCUSSION:

It is usual belief that the medicos are resistant to psychological consequences following stressful events. They have stood against the odds, have spent several months for preparation just to get in to this field and have passed litmus test to get through the medical school. So in a way the general assumption is they shouldn't be vulnerable to the psychological distress. The human mankind isn't immune to mental illness like depression and anxiety rather medicos are more at risk because of the nature of hardship they need to pass through and many stressful events with countless sleepless nights they need to pass on to proceed further.

This was the first kind of study done at BPKIHS where both MBBS and BDS along with Interns were included, in a way it includes diverse group. We also have 56(9.5%) of the participants from India which makes this study more diverse

yet unified to assess psychological distress like anxiety and depression. The other strength of this study is its inherent nature of enrolling students from diverse cultural and ethnical background, from all regions of Nepal representing mountainous region, hilly areas and from the plain Terrai.

The mean age of participants was 22±2years, representing the adolescents and young adults. Total of 600 semi-structured questionnaire along with BDI scale to look for symptoms of depression, a question to assess suicidal ideation and attempt in the last one year and BAI scale for symptoms of anxiety was given to the students, 588(98%) of them filled the form and responded in the given scale. A study conducted by Dahlin M et al[1] also had reported the response rate of 90.4%(n=342) and Adhikari et al.[9] 92.7%(n=343) .The sample size in this study thus can be regarded good enough for screening common psychological entities like depression, suicidal ideation and anxiety disorder.

The prevalence of symptoms of depression based on BDI was seen in 25.3% in this study which is consistent with the findings observed by Adhikari et al.[9] They have noted the prevalence to be 29.2%(based on Patient Health Questionnaire (PHQ). Rotenstein LS et al[10] conducted a systematic review and have found depression or depressive symptom prevalence to be 27.2% from the data extracted from 167 cross-sectional studies (n = 116 628) and 16 longitudinal studies (n = 5728) from 43 countries. They have found all but 1 study used self-report instruments like we have used in this study. So they have summarized the prevalence estimates ranges across assessment modalities from 9.3% to 55.9%. This seems higher than general population because in the mentioned studies screening tool were used to assess depressive symptoms rather than disorder. In our study 12.8% of the participants had clinically significant symptoms of depression which was above the cut off score to seek medical advice as per BDI. This finding is consistent with the finding shared by Dahlin et al[1] where they have reported 12.9% had depression in their study and in a study conducted by Lim GY et al[11] ; they have reviewed to see the aggregate prevalence of depression in communities from different

countries between 1994 and 2014 and to explore the variations in prevalence stratified by geographical, methodological and socio-economic factors. They have found 90 studies that met the inclusion criteria (n = 1,112,573 adults) with 68 studies on single point prevalence, 9 studies on one-year prevalence, and 13 studies on lifetime prevalence of depression. A random-effects model meta-analysis that was performed to calculate the aggregate point, one-year and lifetime prevalence of depression calculated prevalence of 12.9%, 7.2% and 10.8% respectively. The prevalence of depression was 15.4% in the studies published from 2004 to 2014 and when using self-reporting instruments (17.3%) to assess depression. So over all the prevalence of depression can vary with the type of scale used, methodology and the cut off score of different score.

In this study the prevalence of suicidal ideation was noted in 6.3%(n=37) and 0.7%(n=4) have attempted in the last one year. Rotenstein et al[10] in a meta-analysis reviewed 24 cross sectional studies(n=21002) from 15 countries. They have analyzed the prevalence of suicidal ideation ranging from 9.0% to 13.7%(11% over all pooled prevalence) and 7.4% to 24.2% by using different assessment modalities. In a study conducted by Adhikari A et al[9] the prevalence suicidal ideation was 4.7%. The prevalence findings in all these studies including ours is consistent with each other however suicides rates are different across the globe, regions and ethnic groups. Silke Bachmann[12] published an article based on a very broad literature search from Geneva Global Health Hub WHO Member States(194 countries), using the Internet. Their databases cover 194 member states; data is collected according to the same principles and is therefore comparable. He scanned PubMed for biomedical data bank. His findings revealed suicide rate was 10.7 worldwide. The rate was quite different in certain regions. In the Eastern Mediterranean region the suicide rates of 3.8 and 4.3, the African region 8.8 and 12.8, the Americas 9.6 and 9.1, the Western Pacific region 10.8 and 9.1. South East Asia 12.9 and 13.3, and Europe 14.1 and 11.9 (all crude and age-standardized). So certain variability in suicidal

ideation and attempts are rather common than exception.

Anxiety spectrum is less studied than depression among medical students. In this study the prevalence of anxiety was 7.8% among the participants. A systematic review was conducted by Hope V et al[13] by using search terms encompassing psychological distress amongst medical students. They have used OvidSP to search the following databases: Ovid MEDLINE (R) from 1948 to October 2013; PsycINFO from 1806 to October 2013, and EMBASE from 1980 to October 2013. The searches identified 29 eligible studies. Prevalence of 7.7-65.5% for anxiety was recorded. The wide range of results reflects the variable quality of the studies. A review Brazilian study done by Baldassin S[14] published from 1997 to 2009, he found that anxiety levels among medical students ranged from 1.9 to 79.9%. So there is huge variation in different studies as the screening tools used in different studies are different. The medicos are more vulnerable to different stressful events hence more likely to suffer from depression and anxiety problem which can be reveled in the mentioned studies including the present studies.

CONCLUSION:

There is a very high prevalence of depression, suicidal ideation and anxiety among medical and dental students whose causes are multifaceted. This is quite alarming issues probably demands some modification or else the future health care systems holders are at risk of developing psychiatric morbidities more than their peers working in other sectors and disciplines.

CONFLICT OF INTEREST: None

REFERENCES:

1. *M.Dahlin, N. Joneborg, and B. Runeson, (2005)"Stress and depression among medical students: a cross-sectional study," Medical Education, vol. 39, no. 6, pp. 594–604*

2. *L. N. Dyrbye, M. R.Thomas, and T. D. Shanafelt,(2006) "Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students," Academic Medicine, vol. 81, no. 4, pp. 354–373.*

3. *Rosenthal JM, Okie S.(2005) White coat, mood indigo: depression in medical students. N Engl J Med; 353:1085-8.*

4. *Tyssen, R., Vaglum, P., Grønvold, N. T., &Ekeberg, O. (2001). Suicidal ideation among medical students and young physicians: A nationwide and prospective study of prevalence and predictors. Journal of Affective Disorders, 64, 69-79.*

5. *Hays, L. R., Cheever, T., & Patel, P. (1996). Medical student suicide, 1989-1994. American Journal of Psychiatry, 153, 553-555.*

6. *A. Singh, A. Lal, and A. Shekhar,(2010) "Prevalence of depression among medical students of a private medical college in India," Online Journal of Health and Allied Sciences, vol. 9, no. 4, pp. 8–12.*

7. *I. Singh and A. Jha,(2013) "Anxiety, optimism and academic achievement among students of private medical and engineering colleges: a comparative study," Journal of Educational and Developmental Psychology, vol. 3, no. 1, pp. 222–233.*

8. *Chandrashekhar T Sreeramareddy, Pathiyil R Shankar, VS Binu, ChiranjoyMukhopadhyay, Biswabina Ray and Ritesh G Menezes.(2007) Psychological morbidity, sources of stress and coping strategies among undergraduate medical students of Nepal. BMC Medical Education, 7:26 doi:10.1186/1472-6920-7-26*

9. *Adhikari A, Dutta A, Sapkota S, Chapagain A, Aryal A, Pradhan A. Prevalence of poor mental health among medical students in Nepal: a cross-sectional study. BMC medical education. 2017 Dec;17(1):232.*

10. *Rotenstein LS, Ramos MA, Torre M, Segal JB, Peluso MJ, Guille C, Sen S, Mata DA. Prevalence of depression, depressive symptoms, and suicidal ideation among medical students: a systematic review and meta-analysis. Jama. 2016 Dec 6;316(21):2214-36.*

11. *Lim GY, Tam WW, Lu Y, Ho CS, Zhang MW, Ho RC. Prevalence of depression in the community from 30 countries between 1994 and 2014. Scientific reports. 2018 Feb 12;8(1):1-0.*

12. *Bachmann S. Epidemiology of suicide and the psychiatric perspective. International journal of environmental research and public health. 2018 Jul;15(7):1425.*

13. *Hope V, Henderson M. Medical student depression, anxiety and distress outside North merica: a systematic review. Medical education. 2014 Oct;48(10):963-79.*

14. *Baldassin S. Anxiety and depression in medical students: review of Brazilian studies. ABEM notebooks. 2010 Oct; 6 (6): 19-26.*