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PREVALENCE OF DEPRESSION AMONG UNDERGRADUATE MEDICAL STUDENTS : A CROSS SECTIONAL STUDY CONDUCTED AT MIDNAPORE MEDICAL COLLEGE AND HOSPITAL, PASCHIM MIDNAPORE DISTRICT WB, INDIA

Community Medicine

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ABSTRACT

BACKGROUND: Depression among medical students represents a neglected public health problem in India. Medical education is highly stressful for students. Medical students are confronted with significant academic, psychological and existential stressors. They repeatedly experience different stressors which make them vulnerable for psychological problems. This study was undertaken to determine the prevalence of depression among the undergraduate medical students.

METHODS: The study was an observational, descriptive and cross sectional study, period of study being three weeks i.e. from 1st April 2019 to 21st April 2019 among 67 4th semester batch of medical student of Midnapore Medical College and Hospital. A predesigned, pretested structured questionnaire was used for data collection. Data was collected during relaxed state when there is no exam and in a stressful condition, one week before the seasonal exam.

RESULTS: The questionnaire consisted of "***Beck Depression Inventory II***" collected from 67 students. Of the 67 medical students participated in the study, 22 (32.84%) were males and 45 (67.16%) were females. The overall prevalence of depression was found to be 40.30%. Majority were Hindu 52 (77.61%) followed by Islam 15 (22.39%). Higher level of depression was observed among age group more than or equal to 22 (23.88%) years and least were found in age group of 20 years (4.48%). It was also found that anxiety score was higher in tensed state while the stress and depression scores were higher in relaxed state. Stress, anxiety and depression scores of females are more than males in relaxed state.

CONCLUSIONS: There is increased prevalence of depression among the medical students. The severity is more among the females. Early screening and intervention are advisable because it will help the students in reducing their stress, anxiety and depression which are in their initial phase and can be managed easily with few sessions of counselling

KEYWORDS

Depression, Medical Students, BDI.

INTRODUCTION:

Medical students are confronted with significant academic, psychological and existential stressors.[1] Consequently, prevalence of depression is higher in medical students compared to the general population.[2]

Training in Medical Colleges is intended to prepare valuable future health care provider. During medical training students are subjected to different types of stress like huge academic pressure, family or emotional problems. These stresses often exert negative effect o a student's academic performance, physical heath and psychological wellbeing resulting in depression, anxiety, drug abuse etc. It is very important to detect early symptoms of depression with appropriate intervention. From literature search we found that depression varied according to age, gender, year of training and Socio-economic status among medical students.

Depression among medical students represents a neglected public health problem in India. It is very important to prevent the ill effects of depression on one's educational attainment and career through early detection and proper interventional measures. Few studies have been conducted at a global level to assess the prevalence of depression among medical students. All these studies have been conducted in western countries as well as in other parts of the world.[3,7] In India, epidemiological studies on depression among medical students are scanty. Clearly, depression in medical students is of paramount importance and warrants serious study.

In recent years, depression has been recognized as a major morbidity in medical schools and the various factors that have been seriously affecting their academic performance and quality of life has been appreciated.[8] It is important for medical educators to know the magnitude of depression in students and factors causing them, which not only affect their health and academic achievement but also has serious consequences as suicide.[9,10]

Our study was conducted to assess depressive symptoms among MBBS students of 4th semester of Midnapore Medical College & Hospital using Beck Depression Inventory II (BDI II) scale, to find out the socio-demographic factors of the study population and to assess the relationship of some socio-demographic factors with the presence of depression (if any).

MATERIALS AND METHODS:

The study was an observational, descriptive and cross sectional study, period of study being three weeks. The place of study was Midnapore Medical College and Hospital. 4th semester batch of M.B.B.S. consisted of 82 students, 70 were present on the day of data collection while 67 students only agreed to participate in the study. A predesigned, pretested structured questionnaire was used for data collection. Pre testing was done among few 6th semester students. The first part of the questionnaire consisted of personal information such as age , gender, height, weight, residence, no. of siblings ,relationship with parents, father`s occupation and mother`s occupation, per capita family income and BMI. The second part of the questionnaire consisted of "***Beck Depression Inventory II***" created by Aaron T. Beck.

INCLUSION CRITERIA :
Those who agreed to participate in the study.

EXCLUSION CRITERIA :
Those who not willing to participate in the study

BDI II :
It is a 21 question multiple choice self report inventory. It is a subjective scale used for screening purpose which has to be further evaluated to confirm the diagnosis.

In its current version questionnaire is designed for individuals aged 13 and over and it is composed of items relating to symptoms of depression in last two weeks such as hopelessness, irritability and cognition such as guilt and feeling as if punished as well physical symptoms such as fatigue and weight loss.

Beck developed a triad of negative cognition about the world, the future and the self which play a major role in depression.

Each questions had a set of at least four possible choices, range in intensity on a scale value of 0 to 3 and total score of 63. Higher total score indicates most severe depressive symptoms.The cut-off we used were as follows:
0 – 13: no depression
14 -19: mild depression
≥ 20: moderate to severe depression.

Study Technique was self reporting and subsequently filling up of pre-designed pre-tested structured questionnaire, in a lecture class after taking informed verbal consent and by measuring height and weight of participants for computation of BMI. The weight was measured in kilogram without shoes using a standing weighing machine having precision of 0.5 kg. Checks on the scale were made routinely before recording the weight of each student and the pointer was adjusted to zero using the screw provided.

The height was taken barefooted in centimetre using standard measuring tape. A vertical tape fixed perpendicular to the ground on the wall was used as the scale. This tape was non-stretchable. It was fixed with transparent adhesive tape and care was taken to see that there was no fold or tilting to any side. During the examination, also the scale was repeatedly checked for loosening of adhesive tapes or tilting of the scale. Height was recorded to the nearest 1 cm.

Data were entered into MS Excel, checked for accuracy, proportions and appropriate statistical tests were done using SPSS Version 17.0.

Study variables used were Age in completed year, Gender, Socio economic status- According to modified BG Prasad scale (2015), place of residence, type of family, BMI - weight in kg/height in meter square (WHO).

RESULTS:

Highest proportion of student belonged to age of 22 years 35 (52.54%). Proportion of female students 45 (67.16%) were higher in the study. Highest proportion of students belonged to upper middle class 35 (52.24%) followed by upper class 21 (31.34%) and lower middle class 11 (16.42%). In the study 54 (80.60%) of the students belonged to nuclear family and rest 13 (19.40%) belonged to joint family. Majority were Hindu 52 (77.61%) followed by Islam (22.39%). In the study 40 (59.70%) students belonged to urban community and rest 27 (40.30%) were from rural community. In the study 14 out of 67 students (20.2%) were single child while 4 out of 67(5.9%) had more than 4 siblings. In study 42 (62.69%) had normal BMI, 11 (16.42%) were underweight, 9 (13.43%) were pre-obese and 5 (7.46%) were obese. (Table 1)

Out of 67 students 40 (59.70%) of students did not report depressive symptoms whether 13 (19.40%) had mild depression and 14 (20.90%) moderate depression. Three subjects found to have more than equal to score of 31. Out of 13 moderate-severely depressed students 6 (46.15%) were found to have thoughts of committing suicide and one have had thoughts and would like to carry it out if had a chance. Mild depression was high among age group of more than or equal to 22 years 8 (11.94%) followed by 4 (5.97%) amongst 21 years and 1 (1.49%) amongst 20 years students. Mild depression was found high among age group of more than or equal to 22 years 8 (11.94%) followed by 4 (5.97%) amongst 21 years and 2 (2.99%) amongst 20 years students.
Mild depression was high in female students 7 (10.45%) compared to male students 6 (8.96%). Moderate depression was also high in female students 8 (11.94%) compared to male students 6 (8.96%).

Most of the students 57 (85.07%) reported to have good relationship with their father while no 10 (14.93%) have bad relationship with father. On the other hand 53 (9403%) students had good relationship with their mother while the rest 4 (5.97%) had not so good relationship with their mother. Students belonged to nuclear family had more depression 23 (34.33%) compared to joint family 4 (5.97%). Students of upper class have more depression 12 (17.91%) followed by upper middle class 8 (11.94%) and lower middle class 7 (10.45%). Depression was higher in students who used substance 16 (23.88%) than those who don't abuse substance 11 (16.42%). History of psychiatric illness was found in 8 (11.94%) of students and they were depressed. (Table 2)

In our study we found females to be more depressed than males. Those who had good relationship with father were found to be less depressed in relation to those who not so had good relationship with father. Those who had good relationship with mother were found to be less depressed in relation to those who not so had good relationship with mother. Lower middle class students had less depression than students of upper category socio-economic status. Proportion of those students belonging to nuclear families had more depression. Proportion of students having more than one siblings were found to be depressed more as compared to those who were single child. More number of siblings increased depression among the students.

Depressed students reported changes in sleep pattern like increased sleep, decreased sleep, early morning awakening as compared to their non depressed peers.

DISCUSSION:

Consistent with the economic changes in the country, medical student population is increasing every year. In this competitive era, this has enhanced the risk of developing various mental disorders like depression. Well-documented studies to determine the prevalence of depression and its associated factors among medical students are few at global level.[3-7] To the best of our knowledge, there are no studies using Beck Depression Inventory to assess depression among medical students in India, but there are some studies among adolescents.[11] There is a wide difference in prevalence rates in these studies. Since the Beck Depression Inventory is a subjective scale, it has not been used by previous studies.

In the current study, the BDI has been utilized to detect the prevalence of depression among medical students. Although it is not designed for diagnostic purposes, its epidemiologic utility has been evaluated in several studies, which concluded that it is a reliable and valid instrument for detecting depressive disorders in non-clinical populations. Several studies support the BDI's usefulness in measuring and predicting depression in adolescent.[11-13]

In the present study the prevalence of depression was 400.30%. Prevalence rates of depression are estimated to range from 15% to 66% in various studies.[3-7, 14-16] Chan among Chinese medical students in Hong Kong found that around half of the medical students are depressed.[5] In contrast, a study done in Pakistan found that the prevalence rate varied from 49% to 66% among medical students.[14] Another study has shown that 39.4% of the medical students are depressed by using the instrument Depression Anxiety Stress Scale.[1] A study among adolescents in India showed the prevalence among college going girls as 29%.[11] Another study done in Iran among high school and Pre-University students found out that 34% of them were depressed according to cut- off score of BDI 16.[17] The present study has shown that the prevalence of depression is higher among medical students compared to the above studies. This is mainly because of inclusion of mild degree of depression by lower cut off for BDI score in our study. More than 3/4 of the depressed students belonged to mild to moderate degree of depression in our study. Other possibilities could include differences in the demographic structure of our students and even the increase in competition in medical field.

CONCLUSION :

In conclusion, this study has shown that the prevalence of depression in medical students is high and a similar trend has been seen in studies done around the globe. Many actors like academic performance, relationship with family, substance abuse etc have an impact on the prevalence of depression. Medical students are reluctant to seek help for depressive symptoms. Initiatives need to be taken to decrease the prevalence of depression in medical students and improve their help-seeking behaviour.

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DECLARATIONS
FUNDING: *Self funding*
CONFLICT OF INTEREST: *Nil*
ETHICAL APPROVAL: *The study was approved by the Institutional Ethics Committee*

Table 1: Characteristics of the study population (n=67)

Characteristics	No	%
Age (years)		
20	9	13.43
21	23	34.33
≥22	35	52.24
Gender		
Male	22	32.84
Female	45	67.16
Socioeconomic status		
Upper class	21	31.34
Upper middle	35	52.24
Lower middle	11	16.42
Type of Family		
Joint	13	19.40
Nuclear	54	80.60
Religion		
Hindu	52	77.61
Islam	15	22.39
Place of Residence		
Urban	40	59.70
Rural	27	40.30
BIMI		
Normal	42	62.69
Underweight	11	16.42
Pre-obese	9	13.43
Obese	5	7.46

Table 2 : Distribution of students according to depression and various factors (n=67)

Factors	Probable Depression							
Age (in years)	No Depression		Mild Depression		Moderate Depression		Total	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
20	6	8.96	1	1.49	2	2.99	9	13.43
21	15	22.39	4	5.97	4	5.97	23	34.33
≥22	19	28.36	8	11.94	8	11.94	35	52.24
Total	**40**	**59.70**	**13**	**19.40**	**14**	**20.90**	**67**	**100.00**
Gender								
Male	10	14.93	6	8.96	6	8.96	22	32.84
Female	30	44.78	7	10.45	8	11.94	45	67.16
Total	**40**	**59.70**	**13**	**19.40**	**14**	**20.90**	**67**	**100.00**
Relationship with father								
Good	35	52.24	10	14.93	12	17.91	57	85.07
Not good	5	7.46	3	4.48	2	2.99	10	14.93
Total	**40**	**59.70**	**13**	**19.40**	**14**	**20.90**	**67**	**100.00**
Relationship with mother								
Good	38	56.72	13	19.40	12	17.91	63	94.03
Not Good	2	2.99	0	0.00	2	2.99	4	5.97
Total	**40**	**59.70**	**13**	**19.40**	**14**	**20.90**	**67**	**100.00**
Type of family								
Joint	9	13.43	2	2.99	2	2.99	13	19.40
Nuclear	31	46.27	11	16.42	12	17.91	54	80.60
Total	**40**	**59.70**	**13**	**19.40**	**14**	**20.90**	**67**	**100.00**
Socio-economic status								
Upper class	9	13.43	6	8.96	6	8.96	21	31.34
Upper middle	27	40.30	3	4.48	5	7.46	35	52.24
Lower middle	4	5.97	4	5.97	3	4.48	11	16.42
Total	**40**	**59.70**	**13**	**19.40**	**14**	**20.90**	**67**	**100.00**
Substance abuse								
Yes	1	1.49	7	10.45	9	13.43	17	25.37
No	39	58.21	6	8.96	5	7.46	50	74.63
Total	**40**	**59.70**	**13**	**19.40**	**14**	**20.90**	**67**	**100.00**
Family history of psychiatric illness								
Yes	0	0.00	**3**	4.48	**5**	7.46	**8**	11.94
No	**40**	59.70	**10**	14.93	**9**	13.43	**59**	88.06
Total	**40**	**59.70**	**13**	**19.40**	**14**	**20.90**	**67**	**100.00**

REFERENCES

1. Vaidya PM, Mulgaonkar KP. Prevalence of depression, anxiety and stress in undergraduate medical students and its correlation with their academic performance. Indian J of Occup Ther. 2007;39:7–10.
2. Dahlin M, Joneborg N, Runeson B. Stress and depression among medical students: A cross-sectional study. Med Educ. 2005;39:594–604.
3. Clark DC, Zedlow PB. Vicissitude of depressed mood during four years of medical school. J Am Med Assoc. 1988;260:2521–8.
4. Levine RE, Litwins SD, Frye AW. An Evaluation of Depressed Mood in Two Classes of Medical Students. Acad Psychiatry. 2006;30:235–7.
5. Chan DW. Depressive symptoms and depressed mood among Chinese medical students in Hong Kong. Compr Psychiatry. 1991;32:170–80.
6. Zoccolillo M, Murphy GE, Wetzel RD. Depression among medical students. J Affect Disord. 1986;11:91–6.
7. Birmaher B, Ryan ND, Williamson DE, Brent DA. Childhood and adolescent depression: A review of the past 10 years, Part I. J Am Acad Child Adolesc Psychiatry. 1996;35:1427–39.
8. Sreeramareddy CT,Shanker PR, Binu VS, Mukhopadhyay C, Ray B, Menezes RG. Psychological morbidity, sources of stress and coping strategies among undergraduate medical students of Nepal. BMC Med Edu 2007;7:26
9 Tyssen R, Hem E, Vaglum P, Gronvold NT, Ekeberg O. The process of suicidal planning among medical doctors: predictors in a longitudinal Norwegian sample. J Affect Disord 2004;80(2-3):191-8.
10. Dyrbye LN, Thomas MR, Massie FS, Power DV, Eacker A, Harper W, et al. Burnout and suicidal ideaton among U.S. medical students. Ann Intern Med 2008;149(5):334-41.
11. Nair MK, Paul MK, John R. Prevalence of depression among adolescents. Indian J Pediatr. 2004;71:523–4.
12. Barrera M, Jr, Garrison-Jones CV. Properties of the Beck Depression Inventory as a screening instrument for adolescent depression. J Abnorm Child Psychol. 1988;16:263–73.
13. Teri L. The use of the Beck Depression Inventory with adolescents. J Abnorm Child Psychol. 1982;10:277–84.
14. Inam SNB, Saqib A, Alam E. Prevalence of anxiety and depression among medical students of private university. J Pak Med Assoc. 2003;53:44–7.
15. Aniebue PN, Onyema GO. Prevalence of depressive symptoms among Nigerian medical undergraduates. Trop Doct. 2008;38:157–8.
16. Marie D, Joneborg N, Runeson B. Stress and depression among medical students: A cross sectional study. Med Educ. 2005;39:594–604.
17. Modabber-Nia MJ, Shodjai-Tehrani H, Moosavi SR, Jahanbakhsh-Asli N, Fallahi M. The prevalence of depression among high school and pre university adolescents: Rasht, Northern Iran. Arch Iran Med. 2007;10:141–6.