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Original Article

Depression In Physicians-In-Training and its association with screen time and duration of sleep a Cross-sectional Study

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ABSTRACT

Background: This study is done to understand prevalence and factors associated depression in physicians-In training. There is a need to understand if depression in medical students is associated with risk factors like use of screen based entertainment and duration of sleep on daily basis. **Material and Methods:** The study design was cross sectional. Self administered standard questionnaire i.e. PHQ-9 (Patient Health Questionnaire) was utilized for categorization into major and minor depression. The questionnaire was administered to 146 second semester medical students of M.B.B.S. Information was collected regarding average duration of time spent daily on screen based entertainment, and that devoted to sleep. **Results :** Out of the total 132 medical students, 52.27% students had some form of depression. Prevalence of major depression in medical students was found to be 18.18%. A total of 13 students (10%) were found to have suicidal ideation. **Conclusions:** Results suggest that prevalence of depression is higher in medical students (18.18%) than general population as was found by similar studies and about 10% students had suicidal ideation. There is also association between sleep deprivation and increased use of screen based entertainment. Students should be provided proper and accessible counseling at the colleges to avoid possible complications of depression.

Keywords: Depression, Students, Medical

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INTRODUCTION

Depression is a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration.¹ Globally, an estimated 350 million people of all ages suffer from depression. Medical students during their training in medical colleges face a lot of stress, both curricular and extracurricular. Besides being medical undergraduates, these students are in their adolescence and face the added pressures of coming of age. The students are plagued with various mental health issues like anxiety, depression, and insomnia. Also, they have a predisposition to indulgence in screen based entertainment which can be contributory to or outcome of depression. Increased use of screen based entertainment may lead to insomnia and other sleep disturbances which are also seen in depression.^{2,3} Symptoms of sleep disturbance cause distress and are a strong risk to suicide.⁴ These students are our future doctors and protectors of patients' health. Understanding the dynamics of mental wellbeing vis-a-vis depression is important not only for general public, but also medical students. It is of vital importance

to understand the prevalence of depression among medical students as compared to the youth of general population. Also, there is a need to assess the association of screen based entertainment, duration of sleep and depression. Aim of the present Study to estimate the prevalence of depression among medical students studying M.B.B.S. and Study the association of depression with hours of sleep and screen time spent by the student.

MATERIAL AND METHODS

The study was conducted at a Government Medical College. The study design was cross sectional. Prior to commencement of the study, the study protocol was submitted to the Institutional Ethics Committee and approval was taken. The study was explained to the study participants and written informed consent was taken. Participant identification as well as the confidentiality of information was ascertained and maintained. Self administered standard questionnaire i.e. PHQ-9 (Patient Health Questionnaire) was utilized for categorization into major and minor depression.

The questions in PHQ 9 are based directly on the diagnostic criteria for major depressive disorder in DSM-IV. The tool has grading of the depression based on score such as 0-4 is considered as normal; 5-9 mild depression; 10-14 moderate depression and more than 15 as severe depression. The cutoff of major depression in current study was considered as score of more than 10. Questions regarding suicidal ideation were included in the standard questionnaire. The students were also asked information regarding average duration of time spent daily on screen based entertainment namely mobile phones, laptop, television, video games, kindle devices and others. The hours of sleep were assessed by average duration of sleep in the previous 2 weeks. The study findings were to be utilized to help the students with major depression or suicidal ideation by appropriate referral to therapist and/or counselling. The questionnaire was administered to 146 second semester medical students of M.B.S. 132 complete and valid responses to questionnaires were assessed with 89% response rate.

STATISTICAL ANALYSIS

The data was collected and entered in excel sheet. Data analysis was done using SPSS version 22. Depression was analysed considering questionnaire score of less or equal to 10 as no major depression and more than 10 as major depression (dichotomous variable). Chi square test was used to find association between depression and study variables. Odds ratio (OR) and p- value are calculated to understand association.

RESULTS

The 132 students included 47 males (35.6%) and 85 females (64.4%), within the mean age of 19.89 ± 0.619 . Out of the total 132 medical students, 52.27% students had some form of depression; either mild, moderate or severe. Prevalence of major depression in medical students was found to be 18.18% (n=24) having higher prevalence in females (20%) as compared to males (14.9%). Mild depression was seen in 34.09% students (males: 34.04%; females: 34.11%). A total of 13 students (10%) were

found to have suicidal ideation. Table 1 shows the gender wise distribution of mild, moderate and severe depression.

Table 1: Gender wise distribution of mild, moderate and severe depression.

Level of Depression	PHQ-9 Score	Male		Female		Total Percentage	
		N	%	n	%	n	%
No depression	0-4	24	51.1	39	45.9	63	47.7
Mild depression	5-9	16	34.0	29	34.1	45	34.1
Moderate depression	10-14	5	10.6	11	12.9	16	12.1
Severe depression	>15	2	4.3	6	7.1	8	6.1
Total-		47	100	85	100	132	100

The following table shows the association between various risk factors. It is seen that there is no significant association between gender and depression in this study. Depression in medical students is found to be associated with decreased hours of sleep (less than 6 hours) with the Odds Ratio OR = 4.45. In this study there was no increased risk of developing depression if the student overslept for more than 8 hours. The total time spent on screen based entertainment in a day being more than 4 hours was associated with increased risk of depression. The average duration of mobile use of more than 2 hours is not significantly associated with depression.

Table 2: association of depression vis-a-vis variables.

Variable	Reference	Comparison group	Chi Square(x2)	Odds Ratio (confidence interval)	P- value
Gender	Male	Female	0.53	1.43 (0.55- 3.74)	--
Average hours of sleep	6-8	<6	4.786	4.45 (1.32- 14.98)	0.028
	6-8	>8	0.129	0.57 (0.12- 2.73)	0.719
Total screen time	<4	>4	6.897	3.61 (1.33- 9.81)	0.0086
Mobile use in hour	<2	>2	1.43	1.90 (0.66- 5.5)	0.23

DISCUSSION

The prevalence of depression in this questionnaire based study was found to be 52.27%. This study showed lower prevalence than that observed by R. Rawat et al⁵ and Vankar et al⁶ which is 58% and 64% respectively. Both the above studies were done in medical students and utilized same PHQ-9 scale. Also it is important to note that female medical students have higher prevalence of moderate to severe depression i.e. 20% (PHQ-9 score more than 10; major depression) as compared to male students, 14.9% as was also seen by Dahlin M et al⁷. This is unlike R. Rawat et al⁵ and V Silva et al⁸ which show similar prevalence of moderate to severe depression among both the sexes. The prevalence of mild depression is nearly same in both the genders. In this study sleep deprivation (less than 6 hours) is significantly associated to depression as compared to excessive sleeping as is seen by others like Yates et al.⁹ The increased hours devoted to screen based entertainment is associated with depression as is seen by Maras D et al² and Madhav KC¹⁰. Increased screen time in adolescents is also associated with higher chances of depression in adulthood. There is no significant association of excessive mobile phone and depression.

CONCLUSION

Results suggest that prevalence of depression is higher in medical students (18.18%) than general population as was found by similar studies and about 10% students had suicidal ideation. There is statistically significant association between sleep deprivation (less than 6 hours) and depression, but not so with excess sleep. Also excessive use of screen based entertainment of more than 4hours/day is associated with depression. It is not clear whether increased screen time is the cause or outcome of depression. The factors highlighted in the study emphasise the requirement of providing stress relieving alternative activities for free time utilization like exercise, yoga, reading, sports in the medical college campus. College should provide for play and exercise area and encourage physical activity and exercise. Students should be provided proper and accessible counselling at the colleges to avoid possible complications of depression and to help them cope with depression.

Limitations

The study being conducted by use of self administered; the personal history and problems contributing to the presence of depression were not assessed. Also the fact that the students are in medical curriculum also may pose a bias in the responses given by the students.

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