

Assessment of Prevalence and Factors Associated with Depression, Anxiety and Stress among Medical Students

Siva Keerthika S¹, Santosh Biradar², Vinod S Kamble³, Shrinivas Reddy B⁴

¹Postgraduate, ²Associate Professor, ³Professor, ⁴Assistant Professor, Department of Community Medicine, ESIC Medical College, Kalaburagi.

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Abstract

Background: Medical students are challenged with academic, psychosocial, health factors which makes them easily prone for Depression, Anxiety and Stress. The study aims to assess the prevalence of Depression, Anxiety and Stress among medical students and to identify the associated factors.

Methods: A cross-sectional study involving all the medical students of ESIC Medical College, Kalaburagi who are willing to participate. DASS 21 scale questionnaire was used to collect data.

Results: The prevalence of Depression, Anxiety and Stress was found to be 17.75%, 29.91% and 12.13% respectively. Statistically significant association was found only between Stress and factors like gender and sleep hours.

Conclusions: Medical students have notable amount of Depression, Anxiety and Stress which has to be addressed at individual level involving peers and family, ensuring endurance in all the activities.

Key-words: Anxiety, DASS 21, Depression, Medical students, Stress.

Introduction

Medical students are one of the vulnerable groups as they are faced with long studying hours with sleep deprivation, surviving in a different environment.

The psychosocial factors and health factors make them easily susceptible for Depression, Anxiety and Stress.

From many previous studies which were conducted among the medical students the prevalence of Depression, Anxiety and Stress was found to be high^{1-7, 9-13}. Hence this study aims to assess the prevalence of Depression, Anxiety and

Stress among medical students and to identify the associated factors.

Materials and Methods

The study was a cross-sectional study conducted among medical students of ESIC Medical College, Kalaburagi over a duration of 3months from June – August 2022. All the medical students from first year to final year, who were willing to participate were included in the study.

DASS 21⁸ questionnaire scale was used to collect data from the medical students. DASS 21 scale is a validated 21 item self-report measure consisting of

Corresponding Author: Shrinivas Reddy B, Assistant Professor, Department of Community Medicine, ESIC Medical College, Kalaburagi.

E-mail: reddymrmcg@gmail.com

7 questions for Depression, 7 questions for Anxiety, 7 questions for Stress. Each question was given a score of 0 (did not apply to me) to 3(applied to me very much or most of the time). The results for the pertinent questions in each area were added up to determine the scores for Depression, Anxiety, and Stress. Then, based on the suggested cut-off scores suggested by the DASS 21 scale for each domain, the individuals were classified as mild, moderate, severe,

and extremely severe.

DASS21 scale questionnaire was circulated among students to collect data. Anonymity and confidentiality were maintained. Informed consent was obtained. The collected data was entered in Microsoft excel and analysed for frequency, percentage and chi-square test.

Results

Table no: 1 Distribution of the Respondents with Baseline Characteristics(n=231)

		Frequency [n]	Percentage %
Gender	Male	88	38.1%
	Female	143	61.9%
Accommodation	Day Scholar	38	16.5%
	Hosteler	193	83.5%
Sleep hours	≤3hrs	5	2.1%
	4-5hrs	45	19.5%
	6-7hrs	148	64.1%
	≥8hrs	33	14.3%
Physical activity per week	Nil	49	21.2%
	1-2times	114	49.4%
	3-4times	39	16.9%
	5times and above	29	12.5%
Smoking status	Never	220	95.2%
	Former	5	2.2%
	Current	6	2.6%

In the present study, majority of the participants were females (61.9%) and living in hostel (83.5%). They had sleep for 6-7 hrs (64.1%) with physical activity 1-2 times (49.4%), and 95.2% were non-smokers.

Table no 2: Prevalence of Depression, Anxiety and Stress among Medical Students (n=231)

	Depression	Anxiety	Stress
	[n] (%)	[n] (%)	[n] (%)
Normal	190 (82.25%)	162 (70.12%)	203 (87.87%)
Mild	26 (11.25%)	37 (16.04%)	27 (11.68%)
Moderate	14 (6.06%)	29 (12.55%)	1 (0.45%)
Severe	1(0.44%)	3 (1.29%)	0 (0%)
Total	231(100%)	231 (100%)	231 (100%)

The present study observed, the prevalence of Anxiety, Depression and Stress as 29.88%, 17.75% and 12.13% respectively.

Table 3: Association of Depression with demographic and baseline characteristics (n=231)

		Depression status			
		No	Yes	Total	P value
		n (%)	n (%)		
Gender	Male	12 (13.64%)	12 (13.64%)	88	1.64
	Female	29 (20.28%)	29 (20.28%)	143	
Accommodation	Day Scholar	8 (21.05%)	8 (21.05%)	38	0.55
	Hosteler	33 (17.10%)	33 (17.10%)	193	
Sleep hours	≤3hrs	1 (20.00%)	1 (20.00%)	5	0.16
	4-5hrs	13 (28.88%)	13 (28.88%)	45	
	6-7hrs	23 (15.55%)	23 (15.55%)	148	
	≥8hrs	4 (12.12%)	4 (12.12%)	33	
Physical activity per week	Nil	12 (24.48%)	12 (24.48%)	49	0.23
	1-2times	22 (19.30%)	22 (19.30%)	114	
	3-4times	4 (10.25%)	4 (10.25%)	39	
	5times and above	3(10.33%)	3(10.33%)	29	
Smoking status	Never	40 (18.19%)	40 (18.19%)	220	0.99
	Former	0 (0.00%)	0 (0.00%)	5	
	Current	1(16.66%)	1(16.66%)	6	

Table 4: Association of Anxiety with demographic and baseline characteristics (n=231)

		Anxiety status			
		No	Yes	Total	P value
		n (%)	n (%)		
Gender	Male	65(73.86%)	23(26.14%)	88	0.33
	Female	97(67.85%)	46(32.15%)	143	
Accommodation	Day Scholar	23(60.53%)	15(39.47%)	38	0.15
	Hosteler	139(72.02%)	54(27.98%)	193	
Sleep hours	≤3hrs	3 (60.00%)	2 (40.00%)	5	0.42
	4-5hrs	28(62.23%)	17(37.77%)	45	
	6-7hrs	105(70.96%)	43(29.04%)	148	
	≥8hrs	26(78.78%)	7(21.22%)	33	
Physical activity per week	Nil	37(75.52%)	12(24.48%)	49	0.24
	1-2times	73(64.04%)	41(35.96%)	114	
	3-4times	29(74.37%)	10(25.63%)	39	
	5times and above	23(79.32%)	6(20.68%)	29	
Smoking status	Never	155(70.46%)	65(29.54%)	220	0.49
	Former	4(80.00%)	1(20.00%)	5	
	Current	3(50.00%)	3(50.00%)	6	

In our study prevalence of Depression and Anxiety was found high in females (20.28%, 32.15%), day scholars (21.05%, 39.47%), those who had sleep less than 6 hours (48.88%, 77.77%), physical

activity less than 2 times per week (43.78%, 59.44%), depression was high in never smoked (18.19%) and anxiety was high in current smokers (50%) but no statistically significant association was found.

Table 5: Association of Stress with demographic and baseline characteristics (n=231)

		Stress status			
		No	Yes	Total	P value
		n (%)	n (%)		
Gender	Male	83(94.32%)	5(5.68%)	88	0.01
	Female	120(83.30%)	23(16.70%)	143	
Accommodation	Day Scholar	33(86.84%)	5(13.16%)	38	0.89
	Hosteler	170(88.00%)	23(12.00%)	193	
Sleep hours	≤3hrs	4(80.00%)	1(20.00%)	5	0.0004
	4-5hrs	34(75.55%)	11(24.45%)	45	
	6-7hrs	134(90.60%)	14(9.40%)	149	
	≥8hrs	30(90.91%)	3(9.09%)	33	
Physical activity per week	Nil	42(85.71%)	7(14.29%)	49	0.21
	1-2times	97(85.09%)	17(14.91%)	114	
	3-4times	38(97.44%)	1(2.56%)	39	
	5times and above	26(89.65%)	3(10.35%)	29	
Smoking status	Never	193(87.50%)	28(12.50%)	220	0.92
	Former	5(100%)	0(0.00%)	5	
	Current	5(83.34%)	1(16.66%)	6	

In our study prevalence of Stress was found high in females (16.70%), day scholars (13.16%), those who had sleep less than 6 hours (44.45%), physical activity less than 2 times per week (29.2%), current smokers (16.66%).

A statistically significant association was found between stress and factors like gender ($P=0.01$) and sleep hours ($P=0.0004$).

Discussion

In our study, majority of the participants were females (61.9%) which was similar to the study conducted by C.K. Teh et al¹² (63.2%) and Wahed W.Y.A et al¹³ (61.1%), but opposite to the study conducted by Melaku et al⁹ where most of the respondents were males (63.1%).

Hostelers made up the majority of the participants (83.5%), which was comparable to the study done by Hossain M. M. et al⁴. (85.2%)⁷ and Melaku et al⁹ (91.5%).

In our study, those who don't do physical activity were found to be 21.2% which is less than the study conducted by Hossain M M et al⁴ (61.5%).

In the present study prevalence of Depression, Anxiety and Stress was found to be 18.12%, 29.84%,

12.03% respectively which is less than the study conducted by Chakraborty et al³ (45.3%, 52.4%, 31.9), Wahed et al¹³ (60.2%, 64.3%, 62.5%), Hossain et al⁷ (96.3%, 97.7%, 89.7%), Iqbal et al⁵ (51.3%, 66.9%, 53%), Kumar et al⁶ (37.6%, 52.1%, 33.7%), Shete et al¹⁰ (20%, 80%, 52%).

Higher prevalence of Depression (20.2%), Anxiety (32.1%) and Stress (16.7%) was found in females which is similar to studies conducted by Chakraborty et al³ and other studies^{2,5,6,10} in India and developing countries^{1,4,7,9,11}. This might be as a result of how emotionally vulnerable women are and how they respond to certain circumstances.

Those who were day scholar found to have higher prevalence of Depression (21%), Anxiety (39.4%) compared to those staying in hostel found to have less prevalence of Depression (17%), Anxiety (27.9%) and Stress status both hostelers and day scholar found slightly similar which was 12% and 13% respectively which was similar to the study conducted by Chakraborty et al³ (43.3%, 51.1%, 30.8%) and Liaqat H et al⁷ (34.42%, 45.08%, 36.06%). The reason might be because they have friends who are in the same age range with whom they can discuss personal issues and receive emotional support.

In the current study, we found that those who were involved in physical activity more often was found to have less prevalence of Depression, Anxiety and Stress which was found comparable to the study conducted by Chakraborty et al³. This could be as a result of the fact that exercise helps to reduce stress by raising endorphin levels.

In this present study, no statistical significance was found between demographic and baseline characteristics and Anxiety and Stress which was similar to the study conducted by C.K. Teh et al¹². But conversely, we found a statistical significant association between stress and gender, sleep hours which was not found in the study conducted by C.K. Teh et al¹². This may be because females have less stress coping mechanism. In the study conducted by Hossain M M et al⁴ found a significant association between gender and anxiety status which was not found in our study.

Conclusion

Medical students have notable amount of Depression, Anxiety and Stress which has to be addressed at individual level involving peers and family, ensuring endurance in all the activities.

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