A Study of Perceived Stress, Coping Strategies and Psychiatric Morbidity among First year MBBS Students of a Medical College

Harshal Chandak[1], Sunil Gupte[2*]

[1]PG Resident, Department of Psychiatry, Dr. Vasantrao Pawar Medical College Hospital & RC, Nashik - 422003, India; harshalchandak47@yahoo.in
[2]Professor & Head, Department of Psychiatry, Dr. Vasantrao Pawar Medical College Hospital & RC, Nashik - 422003, India; sggupte@gmail.com

Abstract

Background: Stress in medical students is a Global phenomenon. Medical curriculum is regarded as a strenuous one demanding long study hours and assimilation of large amount of knowledge. Failure to deal with stresses may be because of the maladaptive coping strategies which may lead to Psychiatric morbidity. **Aims and Objectives:** To study 1. Perceived stress, 2. Stress coping strategies 3. Psychiatric morbidity in first year MBBS students. **Settings and Design:** A cohort study was conducted in outpatient department of Psychiatry of a medical college. **Materials and Methods:** 119 first year MBBS student of a medical college participated in the study. They were interviewed using a Semi structured proforma. Perceived stress was assessed using Cohen's Perceived stress scale 10 item questionnaire. Coping strategy was assessed using short form of Adolescent coping scale 2nd edition. Psychiatric morbidity was assessed by MINI 6.0.0 English version. **Results:** Of 119 students 22(18.49%) had Low stress, 62(52.10%) had Moderate stress and 35(29.41%) had High stress. Adaptive (Productive) coping usage (Mean = 68.84±10.87) was statistically significant than Non Adaptive (Non Productive/Avoidant) coping usage (Mean = 51.20±11.20). Psychiatric morbidity was found in 41(34.45%) students. Anxiety Disorder is most common psychiatric morbidity. **Conclusions:** Majority of students had moderate to high type of stress. Adaptive coping strategy was used by students to relieve stress. Anxiety disorder (15.96%) was the most common psychiatric morbidity.

Keywords: Coping, Medical Students, Psychiatric Morbidity, Stress

1. Introduction

Medical curriculum is regarded as a strenuous one demanding long study hours and assimilation of large amount of knowledge[1]. Students from various backgrounds are attracted towards it. Stress in medical students has been recognized because it has many causes and consequences that affect the physical and psychological well being of students. Failure to deal with stresses may be because of the maladaptive coping strategies which may lead to Psychiatric morbidity.

Perceived stress in medical students along with non adaptive coping strategies to relieve the stress may lead to psychiatric morbidity. Psychiatric morbidity present in students may also build up stress and usage of non adaptive coping strategies[2,3].

The present study endeavors to evaluate perceived stress, stress coping strategies and psychiatric morbidity in First year MBBS students of a medical college.

2. Materials and Methods

The present study was conducted in the Department of Psychiatry of a medical college, after approval from institutional ethics committee. Students were included after they satisfy the inclusion criteria. Purpose of study was explained and written informed consent was taken from

all the participants. All privacy and confidentiality safe-guard was observed.

2.1 Study Design and Study Population

A) Study design-Cohort study B) Study setting-Department of Psychiatry of a Medical college C) Duration of the study -2 years D) Sample size-119

2.2 Eligibility Criteria

2.2.1 Inclusion Criteria

Students of First year MBBS willing for participation in study after giving written informed consent.

Table 1. Sociodemographic factors and perceived stress

SOCIO DEMOGRAPHIC FACTORS		N (%)	LOW STRESS	MODERATE STRESS	HIGH STRESS	STATISTICAL ANALYSIS
SEX	**MALE**	56(47.06%)	12(54.54%)	30(48.39%)	14(40%)	**X²=1.239 P=0.538**
	FEMALE	63(52.94%)	10(45.46%)	32(51.61%	21(60%)	
	TOTAL	119	22	62	35	
SOCIO ECONOMIC STATUS	CLASS I	**23(19.33%)**	**7(31.82%)**	**8(12.90%)**	**8(22.86%)**	**X²=4.764 P=0.3124**
	CLASS II	47(39.50%)	7(31.82%)	25(40.33%)	15(42.86%)	
	CLASS III	49(41.18%)	8(36.36%)	29(46.77%)	12(34.28%)	
	TOTAL	119	22	62	35	
FAMILY TYPE	**NUCLEAR**	**107(89.91%)**	**19(86.36%)**	**57(91.94%)**	**31(88.57%)**	**X²=0.6548 P=0.7208**
	JOINT	12(10.09%)	3(13.64%)	5(8.06%)	4(11.43%)	
	TOTAL	119	22	62	35	
DOMICILE	**RURAL**	**16(13.45%)**	**2(9.10%)**	**9(14.52%)**	**5(14.29%)**	**X²=0.4408 P=0.8022**
	URBAN	103(86.55%)	20(90.90%)	53(85.48%)	30(85.71%)	
	TOTAL	119	22	62	35	
RELIGION	**HINDU**	**95(79.83%)**	**18(18.95%)**	**50(52.63%)**	**27(28.42%)**	**X²=0.2366 P0.8884**
	NON HINDU	24(21.17%)	4(16.67%)	12(50%)	8(33.33%)	
	TOTAL	119	22	62	35	

Table 2. Stress coping strategies

VARIABLE	COPING STRATEGY	N	MEAN	STD. DEVIATION	T-TEST FOR EQUALITY OF MEANS		
					T	DF	SIG.(2- TAILED)
USAGE%	**PRODUCTIVE**	**119**	68.84	10.87	12.334	236	P<0.001
	NON PRODUCTIVE	119	51.20	11.20			
HELPFULNESS%	**PRODUCTIVE**	**119**	**74.12**	**12.74**	**14.178**	**236**	**P<0.001**
	NON PRODUCTIVE	119	47.88	15.66			

*helpfulness is a measure in coping scale showing how beneficial is coping strategy as perceived by each individual. P<0.01 Statistically significant difference was found between means of adaptive (productive) coping usage% and Non adaptive (Non productive) usage% and means of adaptive (productive) coping Helpfulness% and Non adaptive (Non productive) Helpfulness%.

2.2.2 Exclusion Criteria

Student not willing to give written informed consent.

Students were interviewed using a Semi Structured Proforma. Perceived stress of students was assessed using Cohen Perceived stress scale10 (PSS10) Perceived stress level was- scores around 13 were considered low stress/ average, scores of 20 or higher were considered high stress while those between 14-19 were considered moderate level of stress[4,5].

Coping Strategies of individuals were assessed by using Adolescent Coping Scale 2 edition (ACS 2) Short Form. Short form has one item for each scale i.e., 20 ways of coping. On each questionnaire, 2 types of responses are available i.e. usage and helpfulness on two coping styles: Non-productive coping and Productive coping[6].

All study participants were screened for Psychiatric Morbidity by using Mini-International Neuropsychiatric Interview English Version 6.0.0[7].

The mean scores of each scale were noted. The data obtained was pooled, tabulated and subjected to statistical analysis.

2.3 Statistical Analysis

Statistical Analysis was done using the SPSS Software Package for Windows Version 19.0 and tests of significance using EPI INFO software were used.

3. Results

The sample consisted of 119 students of First year MBBS as study population. The present study consisted of 119

Table 3(a). Psychiatric morbidity found in study population

DIAGNOSIS	FREQUENCY	PERCENT
PANIC DISORDER (A)	5	4.20%
AGORAPHOBIA (B)	5	4.20%
SOCIAL PHOBIA (C)	5	4.20%
GAD (D)	4	3.36%
ANXIETY D/O (A+B+C+D)	19	15.96%
DEPRESSION (E)	10	8.40%
BIPOLAR MOOD D/O (F)	2	1.68%
AFFECTIVE D/O (E+F)	12	10.08%
PTSD (G)	1	0.84%
OCD (H)	1	0.84%
SCHIZOPHRENIA (I)	1	0.84%
PRIMARY INSOMNIA (J)	1	0.84%
OTHER (K)	6	5.04%
OVERALL MORBIDITY (A+B+C+D+E+F+G+H+I+J+K)	41	34.45%
NAD (L)	78	65.55%
TOTAL (A+B+C+D+E+F+G+H+I+J+K+L)	119	100.00%

Table 3(b). Psychiatric morbidity and psychiatric illness in family history

Psychiatric Morbidity	Family History of Psychiatric Illness		Total
	Present	Absent	
Present	13	28	41
Absent	11	67	78
Total	24	95	119

Chi- square x^2=5.1731 P value < 0.05(Significant Association).

Table 4. Productive coping and perceived stress

ADJUSTED SCORE RANGE	PERCEIVED STRESS			TOTAL
	LOW	MODERATE	HIGH	
Less Than 70%	12	27	30	69
More Than 70%	10	35	5	50
Total	22	62	35	119

Chi- Square x^2 =16.46 P value < 0.05(Significant Association)

Table 5. Perceived stress and psychiatric morbidity

PSYCHIATRIC MORBIDITY	PERCEIVED STRESS			TOTAL
	LOW	MODERATE	HIGH	
DEPRESSION (A)	1(10%)	4(40%)	5(50%)	10(100%)
BPD (B)	0	0	2(100%)	2(100%)
TOTAL AFFECTIVE D/O (A+B)	**1**	**4**	**7**	**12**
GAD (C)	0	3(75%)	1(25%)	4(100%)
PD(D)	1(20%)	2(40%)	2(40%)	5(100%)
AGORAPHOBIA(E)	0	2(40%)	3(60%)	5(100%)
SAD (F)	2(40%)	2(40%)	1(20%)	5(100%)
TOTAL ANXIETY D/O (C+D+E+F)	**3**	**9**	**7**	**19**
PTSD (G)	0	1(100%)	0	1(100%)
OCD (H)	0	0	1(100%)	1(100%)
SCHIZOPHRENIA (I)	0	0	1(100%)	1(100%)
INSOMNIA (J)	0	0	1(100%)	1(100%)
OTHER (K)	1(16.67%)	3(50%)	2(33.33%)	6(100%)
TOTAL PSYCHIATRIC MORBIDITY (A+B+C+D+E+F+G+H+I+J+K)	**5(12.20%)**	**17(41.46%)**	**19(46.34%)**	**41(100%)**
PSYCHIATRIC MORBIDITY ABSENT (L)	17(21.80%)	45(57.69%)	16(20.51%)	78(100%)
TOTAL (A+B+C+D+E+F+G+H+I+J+K+L)	**22**	**62**	**35**	**119**

Chi- Square x^2 =8.794 P value < 0.05(Significant Association).

students of first year MBBS. Response Rate was 100%. Their mean age was 18.64(SD 0.87).

This Table 3a shows that 41(34.45%) had psychiatric morbidity present. Most common psychiatric morbidity present is Anxiety disorder 19(15.96%) followed by Affective disorder 12(10.08%)

This Table 3b shows that 24 students had family history of psychiatric illness. Among those with positive family history more than half i.e., 13 students had psychiatric morbidity.

This Table 4 shows adjusted score range of Adaptive (Productive) coping usage percentage and perceived in a study population.

This Table 5 shows psychiatric morbidity wise perceived stress in study population. Out of 119 students 41

had psychiatric morbidity present. Among 41 students, 5(12.20%) had low stress, 17(41.46%) had moderate stress, 19(46.34%) had high stress.

4. Discussion

4.1 Socio Demographic Profile of Study Population (Table 1)

Majority of the students (52.94%) were females. Most were from nuclear families (89.91%), belonging to class III (41.18%) of the socio-economic status and living in urban areas (86.55%).

4.2 Gender and Perceived Stress (Table 1)

In the study population low stress was more in males 12(54.54%) than in females 10(45.46%). While moderate stress was more in females 32(51.61%) than in males 30(48.39%) and high stress is more in females 21(60%) than in males 14(40%).

In the study conducted by Somnath T Salgar in first year medical students out of 278 students 165 were male students and 113 were female. Among male students 42 (25.4%) reported high level of stress whereas in 34(30.1%) of female students the stress was reported to be high[8]. The findings are similar to our study.

Similar findings were found in Samira S Bamuhair et al., study at Riyadh, among undergraduate medical students[9].

4.3 Socio Economic Status and Perceived Stress (Table 1)

In the study population perceived stress was more in the students belonging to low socioeconomic status as compared to those students belonging to high socioeconomic status.

David Glasscock et al., found high level of perceived stress among adolescence from families belonging to lower socio economic status[10]. This findings are similar to our study.

4.4 Family Type and Perceived Stress (Table 1)

In the study population it was found that students belonging to nuclear families had more perceived stress as compared to those belonging to joint families. However no significant association was found between family type and perceived stress.

Sandhya Shrestha et.al conducted a study in Nepalese nursing students found that perceived stress was more in students belonging to nuclear families as compared to those belonging to joint families[11]. This finding matches with the finding found in our study.

4.3 Stress Coping Strategies (Table 2)

Adaptive (Productive/Active) coping strategy is used significantly more as compared to non adaptive (Non productive/Avoidant) coping strategy in a study population to relieve stress

In the study conducted by Sami Abdo Radman AL et al., in medical faculty in Malaysia it was concluded that student adopted active coping strategies rather than avoidance coping strategies[12].

Chandrashekhar T Sreeramareddy et al., among undergraduate medical students of Nepal found that students generally used active coping strategies rather than avoidant coping strategies[13].

4.4 Psychiatric Morbidity in Study Population (Table 3(a))

In the study population, 41 (34.45%) students had psychiatric morbidity. Most common psychiatric diagnosis found in our study population is anxiety disorder (15.96%) it was followed by Affective disorder (10.08%) and then PTSD (0.84%), OCD (0.84%), Schizophrenia (0.84%), Primary Insomnia (0.84%) and others (5.04%) which include subsyndromal depression, subsyndromal anxiety and unusual experiences.

In a study conducted by Anam Abrar et al., among medical students of Shifa college of medicine, 39.6% students had anxiety and depression out of which 1st year medical students had more anxiety and depression[14].

In a study conducted by Nivert Zaki et al., 401 medical students were evaluated for psychiatric morbidity out of which prevalence was 59.9% which is higher than present study. The most prevalent psychiatric diagnosis was found to be depression (47.9%) followed by GAD (44.9%) and OCD (44.4%) and least prevalent was anorexia nervosa (0.7%)[15].

Similar findings were found in other studies on medical students[16,17].

4.5 Gender and Psychiatric Morbidity

This study sample consists of 63 female and 56 male students. Out of 63 females, 23(36.51%) had psychiatric diagnosis with anxiety disorder being most common followed by Affective disorder 12(10.08%).

Out of the 56 male 18(32.14%) had psychiatric morbidity with anxiety disorder being most common. Depression being the second most common psychiatric diagnosis.

In the study conducted by Shawaz Iqbal et al., psychiatric morbidity was found to be higher in females as compared to the male[18].

Similar findings were found in other studies[14,16,17].

4.6 Type of Family and Psychiatric Morbidity

In the study population psychiatric morbidity is seen more in patients from nuclear family 37(34.58%) as compared to joint family 4(33.33%). Association between type of family and psychiatric morbidity was statistically not significant.

In the other studies psychiatric morbidity was more in nuclear families as compared to those of joint families and there was a statistically significant association between them[19,20].

4.7 Psychiatric Morbidity and Family History of Psychiatric Illness (Table 3(b))

In the study population, 41 had psychiatric morbidity i.e., 1/3rd students, out of which 1/3rd i.e., 13 students had Positive Family history of Psychiatric illness. There was statistically significant association between Psychiatric morbidity present in students and Positive family history of Psychiatric illness.

Patrick F. Sullivan et al., found that presence of schizophrenia was associated with an increased risk for Autism spectrum disorder and schizophrenia in sibling was associated with an increased risk for Autism spectrum disorder. Bipolar disorder showed a similar pattern of association but of lesser magnitude[21].

Mc Laughlin et al., concluded that Generalized Anxiety disorder have a higher occurrence of anxiety problems among their relative than do individuals without the disorder[22].

4.8 Productive Coping and Perceived Stress (Table 4)

Students used Adaptive (Productive/Active) coping strategy to relieve their perceive stress. There was a significant association between productive coping and perceived stress in the present study.

In the study conducted by Samira S Bamuhair et al., among undergraduate medical students at Saudi Arabia found that coping strategies score showed a mildly positive association with the perceived stress score suggesting that higher the perceived stress more the coping strategies were applied[9].

Yet-Mee Lim et al., in his study in Malaysia showed a positive relationship between perceived stress and coping strategies which implies that higher the level of perceived stress, the better the level of coping strategy[23].

4.9 Psychiatric Morbidity and Perceived stress (Table 5)

In the study population 41 students had psychiatric morbidity out of which 5(12.20%) had low stress, 17(41.46%) had moderate stress and 19(46.34%) had high stress. There was statistically significant difference between psychiatric morbidity and perceived stress.

In study conducted by AD Yussuf et al., found that students who had psychiatric morbidity were 9 times at risk of being stressed consequent upon competing with their peers[2].

5. Conclusions

Most of the 1st MBBS students had moderate to high type of perceived stress. No significant difference between Gender, socio economic status, type of family and perceived stress. Adaptive coping usage is statistically significant as compared to non adaptive coping usage. Significant association present between productive coping strategy and perceived stress. Most common psychiatric morbidity is anxiety disorder. Psychiatric morbidity and family history of psychiatric illness are associated significantly. Gender and Type of family had no significant difference with psychiatric morbidity. Students with psychiatric morbidity had moderate to high type of perceived stress.

6. References

1. Mahajan AS. Stress in medical education: A global issue or much ado about nothing specific? South-East Asian Journal of Medical Education. 2010; 4(2):9–13.
2. Yussuf AD, Issa BA, Ajiboye PO, Buhari OIN. The correlates of stress, coping styles and psychiatric morbidity in the first year of medical education at a Nigerian University. African Journal of Psychiatry. 2013; 16:206–15. https://doi.org/10.4314/ajpsy.v16i3.28
3. Wigman J, Kelleher I, Harely M, Kehoe A. Psychotic symptoms, functioning and coping adolescents with mental illness. BMC Psychiatry. 2014 Apr; 14(97):1–9. https://doi.org/10.1186/1471-244X-14-97
4. Cohen perceived stress scale 10 item. Available from: https://poadcast.uctv.tv/webdocument/Cohen-PSS.pdf
5. Cohen S, Kamarck T, Mermelstein R, A global measure of perceived stress. Journal of Health and Social Behavior. 1983; 24:385–96. https://doi.org/10.2307/2136404
6. Erica F, Lewis R. Adolescent coping scale. 2nd ed. Melbourne: Australian Council for Educational Research; 2011. PMCid:PMC3106544

7. Sheehan D, Baker K, Harnett-Sheehan, Knapp E. Mini International Neuropsychiatric Interview (M.I.N.I.) English Version 6.0.0 ICD-10. Tampa, USA: Sheehan University of South Florida. Available from: http://www.nccpsychiatry.info/File/MINI600.pdf

8. Somnath TS. Stress in first year medical students. International Journal of Biomedical and Advance Research. 2014; 05(01):5–6. https://doi.org/10.7439/ijbar.v5i1.580

9. Samira SB, et al. Sources of stress and coping strategies among undergraduate medical students enrolled in a problem-based learning curriculum. Journal of Biomedical Education, 2015 Sep; 2015:1–8.

10. Glasscock DJ, Andersen JH, Labriola M, Rasmussen K, Hansen CD. Can negative life events and coping style help explain socioeconomic differences in perceived stress among adolescents? A cross-sectional study based on the West Jutland cohort study. BMC Public Health. 2013; 13(532):1–22. https://doi.org/10.1186/1471-2458-13-532

11. Shrestha S, Lama R. Stress/stressors as perceived by nepalese nursing students. International Journal of Nursing Research and Practice. 2014; 1(2):5–9.

12. Radman SA, Ahmed R. Ahmed M. Rampal KG. Stress and coping strategies of students in a medical faculty in Malaysia. Malaysian Journal Med Science. 2011; 18(3):57–64.

13. Sreeramareddy CT, Pathiyil RS, Binu VS, Mukhopadhyay C, Ray B, Ritesh GM. Psychological morbidity, sources of stress and coping strategies among undergraduate medical students of Nepal. BMC Medical Education. 2007; 7(26):1–8. https://doi.org/10.1186/1472-6920-7-26

14. Abrar A, et al. Prevalence of anxiety and depression among medical students of shifa college of medicine. Pakistan Journal of Neurological Sciences. 2014; 9(3):12–5.

15. Zakia N, Ibrahim J. Psychiatric morbidity among third year medical students at the Ain Shams University,Cairo,Egypt. Middle East Current Psychiatry. 2011; 18:51–56. https://doi.org/10.1097/01.XME.0000392849.84304.97

16. Alvi T, Assad F, Ramzan M, Khan FA. Depression,anxiety and their associated factors among medical students. Journal of the College of Physicians and Surgeons Pakistan. 2010; 20(2):122–6. PMid:20378041

17. Jadoon NA, Yaqoob R, Raza A, Shehzad MA, Choudhry ZS. Anxiety and depression among medical students: A cross-sectional study. J Pak Med Assoc. 2010; 60(8):699–702. PMid:20726214

18. Iqbal S, Gupta S, Venkatarao E. Stress, anxiety and depression among medical undergraduate students and their socio-demographic correlates. Indian J Med Res. 2015; 141:354–7. https://doi.org/10.4103/0971-5916.156571 PMid:25963497 PMCid:PMC4442334

19. Agarwal S, Shah R, Sani C, Arora A, Raj D. Bio-socio-demographic factors associated with adolescent psychiatric wellness: A cross sectional study. International Multispecialty Journal of Health. 2016; 2(1).

20. Umesh SS, Rahul RK, Vaishali DP, Sandeep PN, Prashant CP. Study of depression among adolescent students of rural Maharashtra and its association with socio-demographic factors: A cross-sectional study. Int j med res health sci. 2015; 4(1):41–5. https://doi.org/10.5958/2319-5886.2015.00007.7

21. Sullivan PF, Magnusson C, Reichenberg A, et al. Family history of schizophrenia and bipolar disorder as risk factors for Autism. Arch Gen Psychiatry. 2012 Nov; 69(11):1099–103. https://doi.org/10.1001/archgenpsychiatry.2012.730 PMid:22752149 PMCid:PMC4187103

22. McLaughlin KA, Behar E, Borkovec TD. Family history of psychological problems in generalized anxiety disorder. J Clin Psychol. 2008 Jul; 64(7):905–18. https://doi.org/10.1002/jclp.20497 PMid:18509873 PMCid:PMC4081441

23. Lin Y-M, Tam C-L, Lee T-H. Perceived stress, coping strategy and genaral health: a study on an accounting students in Malaysia. International Refereed Research Journal. 2013 Jan; 4(1):88–95.

Cite this article as: Chandak H, Gupte S. A Study of Perceived Stress, Coping Strategies and Psychiatric Morbidity among First year MBBS Students of a Medical College. MVP Journal of Medical Sciences 2018; 5(1):25-32.