Research Article

IJCRR
Section: Healthcare

ASSESSMENT OF STRESSORS IN MEDICAL STUDENTS AND ITS RELATIONSHIP WITH THE SELF-RATED DEPRESSION: A STUDY CONDUCTED IN RURAL TERTIARY HOSPITAL AND TEACHING INSTITUTE OF CENTRAL INDIA

Meenakshi Khapre, Abhay Mudey, Smrutiranjan Nayak, R. C. Goyal

Department of Community Medicine, Jawaharlal Nehru Medical College, Sawangi (M), Wardha, Maharashtra, India.

ABSTRACT

Background: Medical students are more prone to stress either due to their rigid standards and high aspiration or due to demanding education. The stress developed in undergraduates continues further in post-graduation and practice resulting in burnout. In India this area is grossly under reported. Therefore the study was carried out with the objective to find out the amount of stressors and its relation to depression.

Method: A cross sectional study was carried out with complete enumeration of students present in lecture. They were educated and informed of data collection tool. i.e HESI questionnaire and MDI. Data analysis was done by descriptive and inferential statistic.

Result: No difference of level of stressors was found among the students of variable academic years and sexes. 40 % were found to be mildly depressed. All of the Stressors in totality or individual except insufficient feedback and low commitment show significant correlation with MDI scores.

Conclusion: Every two student out of five were found to be depressed and it is positively correlated with the stressors like work for future endurance/ capacity, non-supportive climate, faculty shortcoming, workload, financial concern

Key Words: Stressors, Self-related depression, Medical students

INTRODUCTION

Medical education is both long and costly. Though pursuit of higher education is expected to be stressful, medical students have more distress, anxiety and depression than any other graduates as reported by many studies [1, 2, 3]. The cause of stress in medical students are mainly Long working hours, lack of peer support, competitive environment, rigid authoritative non encouraging faculty, an imbalance between professional and personal lives, lack of recreational activities, staying away from home, financial problems, residency queries, an uncertain future, emergency situations, speedy decisions, life and death issues, cultural and minority issues, mismatch between capability and expectation etc. medical students are high achiever and action oriented prior to admission. They can't tolerate helplessness, dependency, failure. They have high aspiration but rigid standards for themselves. Therefore medical students are more prone to stress.

The curriculum is vast and students are just expected to swallow without digesting or critically value it. Instead of developing the critical and intellectual relationship with medical knowledge, medical colleges just foster the students to accept the facts as said in books or lectures. Thus the road to dynamic and challenging profession is hindering overall personality development. Perceived stress is associated with increased levels of depression, alcohol and drug abuse, relationship difficulties, anxiety and suicide. [4,5] Stress is receiving increased attention because of the realization that tired, tense, anxious doc-

Corresponding Author:
Dr. Abhay Mudey, Professor & Head, Department of Community Medicine, Jawaharlal Nehru Medical College, Sawangi (M), Wardha, Maharashtra, India, E-mail: abhaymudey@hotmail.com

Received: 10.06.2014 **Revised:** 08.07.2014 **Accepted:** 11.08.2014

tors may not provide as high quality care as do those who do not suffer from these debilitating conditions.[6] In India medical education is provided by government and private universities. Government though provide it at nominal cost, it legally bond student for one year compulsory rural posting after completion. After completion of graduation he has to face fierce competition to establish practice, service or get post-graduation. His future is still unsecured. In India stress among medical students might be grossly underreported.

To shift from distress to wellbeing we need to identify the stressors and reshape the salutary factors. Therefore to limelight the amount of stressors present in students and its relationship with the self-rated depression the above study was carried out.

OBJECTIVES

To find the extent of different stressors in medical students

To assess the level of depression among the medical students

To assess the relationship between the types of stressors and level of depression

METHODOLOGY

Study Area: The study was conducted in a Jawaharlal Nehru Medical College

Study Design: A cross-sectional study design was adopted for the study.

Study Sample: The participants of the study were the present students of medical college year 2013

Sample Selection

All the students of the college consenting to participate and were present in the class on the day of the delivering the data collection tool.

Study Tools

Higher education stress inventory (HESI)(7): 24 statements indicates presence and absence of stressful aspects like worries for future endurance /capacity, non-supportive climate, faculty shortcoming, workload, insufficient feedback, low commitment and financial concern. Responses are rated in four point likert scale (value 1-4) does not apply at all, does not apply very well, apply fairly well and apply perfectly with reverse order for absence of stressor, so high scores are less favourable.

Major depression inventory (MDI): self-rating scale to assess the depression was used.

Data collection process: On a pre-decided date, after giving the general information on research, the questionnaire was administered to students present in class room. They were informed that the information retrieved would be used only for research purpose and anonymity would be maintained by giving unique ID to them. The students who were interested in knowing their scores were invited and if needed were referred to student guidance clinic in college.

Analysis: only completed forms were included in final analysis report. Mean score of students for each stressor and depression was computed. The relationship between stressors and depression was analysed by Pearson moment Correlation.

RESULTS

As shown in Table 1, 48.11% were male and 51.89% were female. First year participants were 27.98 % followed by 26%, 24% and 21.6% students of second, third and fourth year respectively.

Table 2 shows the mean score of HESI factor of each academic year. No significant difference was found among the academic years.

39. 9 % were found to be mildly depressed. 9.1% and 8.5% had moderate to severe depression at the time of interview as given in Table 3.

Total HESI score and MDI score were strongly correlated as depicted in Table 4. Also strong correlation of MDI was seen with work for future endurance/ capacity and faculty shortcoming. Non supportive climate and workload were moderately correlated with MDI score. All of the factors in totality or individual except insufficient feedback and low commitment show significant correlation with MDI scores.

DISCUSSION

Stress in a medical school is global phenomenon. The tool used here has seven factors of which WFEC and Low commitment reflects the individual trait rather than effect of education and others like Non supportive climate, faculty shortcoming (academic), workload, insufficient feedback and financial concern reflects the environmental condition. In present study , the mean score for each stressors mentioned in questionnaire was approximately above 55% of maximum score, which depicts that this stressors are present at moderate to high level among the students. In many medical schools, the environment itself is an all prevailing pressure situation, providing an authoritarian and rigid system, one that encourages competition rather than cooperation between learners[8].

This creates the anonymity and non-supportive climate for learning. As medical students enter the clinical years, their concerns change as they find themselves unable to apply what they knew well enough for the examinations and insecurity for jobs creates worries for future. In India as per MCI teacher student ratio is 15: 1, which makes it difficult for teacher to give in dividend attention to each one of them. Many students struggle with questions about their ability to endure the demands of education. The feedback on skills and performance is crucial part in medical education to prepare the competent physician and teacher and create the interest in students but the higher score in low feedback is rather disturbing. More emphasis is given on passive learning rather than active self-directed learning. The curriculum with overload of information, and the environment presenting multiple hurdles 'rather than opportunities for assessing progress' are important sources of academic stress. It is not just the undergraduate study period which brings stress but it may continue during the internship, postgraduate study period, and later into physician's practical life [9]. The study done by Sidhu had shown that Indian students had increases stress score than Chinese and malaysisan in all the aspect academics, social, financial etc.[10]

Present study does not show any significant difference among the level of stressors in between the academic years and sexes. These stresses are constantly present in all the academic years and equal in both sexes. Being a cross sectional study the changes through the transition from first year to final cannot be depicted. There are contradictory findings as some studies [1, 11, 12] showed increase in level of stress from progressing academic years while other showed decrease [13]. The finding of No difference of level of stressors among the sexes is in line with other studies [11, 14]. While some studies indicates female medical students perceive more stress [15] also as per available records the suicidal and depression rates in female students are more than males. The present study was conducted in private institution with well to do family may be the reason for study findings.

37.5 % scored more than cut off point of which 8.5 % that scored very high were in need of psychological counselling. Depression is quite common in medical students and range from 6 % (16) to 25 % (17) using different measures and definitions.

Considering the Cohens guidelines for behavioral studies[18] all the stressors except insufficient feedback and low commitment showed the significant positive correlation with MDI score.

Work for future capacity and faculty shortcoming was strongly correlated while Non supportive climate and workload were moderately correlated with MDI score. Strong positive correlation was found between total HESI score and MDI score. This shows that level of stress increases the chances of depression. Ability of medical students to deal with stress depends on multiple factors, including individual vulnerability, and psychological and social resources as well as stressors [19]. The degree of distress depends on the balance between the stressors and the resources. It is necessary to increase the personnel resources by educating them for stress and time management techniques and coping skills in order to diminish the perceived distress. The stressor therefore has to be identified need to be address by policy maker, teachers, psychologist and family members.

CONCLUSION

Every two student out of five were found to be depressed and it is found to be positively correlated with the stressors like work for future endurance/ capacity, non-supportive climate, faculty shortcoming, workload, financial concern. Thus this stressors need to be address to reduce the distress in medical graduate.

RECOMMENDATION

It is time to make Medical education interesting by innovative active learning methods, restore enthusiasm in the students and to project a more realistic, humane image of the profession. The student guidance clinic should be functional by regular screening and assisting the student with psychological problems. The orientation programmes and counselling services should be started from the entry level. The students must be made aware of the stress and its self-management. It is imperative that future Physicians are healthy themselves before they Treat others.

ACKNOWLEDGEMENT

Authors acknowledge the immense help received from the scholars whose articles are cited and included in references of this manuscript. The authors are also grateful to authors / editors / publishers of all those articles, journals and books from where the literature for this article has been reviewed and discussed.

REFERENCES

1. Helmers , K.F, Danoff , D, Steinert ,Y Leyton, M and Young, S.N (1997) Stress and depressed mood in medical students, law students, and graduate students at Mc Gill University Academic medicine , 72, 708-14.
2. Rautio, A, Sunnari , V, Nuutinen ,M and Laitala , M (2005) Mistreatment of university students most common during medical studies BMC Medical education[online], 5(36)

available from : http//:www.biomedcentral.com/1472-6920/5/36
3. Frank, E. Carrera, J.S, Stratton, T, Buckle, J and Nora. L.M (2006) experience of belittlement and harassment and their correlates among medical students in the United states: longitudinal survey BMJ, 333, 682.
4. Shapiro S, Shapiro D, Schwartz G. Stress management in medical education: a review of the literature. Acad Med2000;75:748–59.
5. Stecker T. Well-being in an academic environment. Med Educ2004;38:465–78
6. Firth-Cozens J. Doctors, their well-being, and their stress. BMJ2003;326:670–1
7. Marie Dahlin, Future Doctor,Mental distress during medical education: cross sectional and longitudinal studies, publish by Karolinska University press, Stockholm, Sweden 2007.
8. Styles WM. Stress in undergraduate medical education: 'the mask of relaxed brilliance'. Br J Gen Pract 1993;43:46-7.
9. Tyssen R, Vaglum P, Gronvold NT, Ekeberg O. The relative importance of individual and organizational factors for the prevention of job stress during internship: a nationwide and prospective study. Med Teach 2005;27:726-31
10. Jagmohni Kaur Sidhu, Effect of Stress on Medical Students, IeJSME 2007: 1 (1): 52-53
11. Niemi PM, Vainiomaki PT. Medical students' distress—quality, continuity and gender differences during a sixyear medical programme. Med Teach2006;28:136-41.
12. Dyrbye L, Thomas MR, Shanafelt TD. Medical student distress: causes, consequences, and proposed solutions. Mayo Clin Proc2005;80:1613-22.
13. Guthire E, Black D, Bagalkote H, Shaw C, Campbell M, Creed F. Psychological stress burnout in medical students: a five-year prospective longitudinal study. J R Soc Med1998;91:237-43
14. Kilkkinen A, Kao-Philpot A, O'Neil A, Philpot B, Reddy P, Bunker S et al. Prevalence of psychological distress, anxiety and depression in rural communities in Australia. Aust J Rural Health 2007;15:114-9.
15. Amr, M., EL Gilany, A.H. & EL-Hawary, A. (2008) Does gender predict medical students stress in Mansura, Egypt? Medical Education Online, 13:12, available at http/www.med.edonline.org
16. Zoccolillo , M, Murphy , G. E & Wetzel, R.D (1986) Depresseion among medical students Journal of affective disorder,11,91-6
17. Givens , J.L and Tjia, J(2002) Depressed medical students use of mental health services and barriers to use, Academic medicine .77(9): 918-21.
18. Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Erlbu.
19. Vitaliano P, Maiuro R, Russ J, Mitchell E. Medical student distress: a longitudinal study.J Nerv Ment Dis 1989;177(2):70–6.

Table 1: Distribution of participants according to academic year and sexes

	Male	Female	Total
First year	46 (51.68 %)	43 (48.3 %)	89 (27.98 %)
Second year	41(48.8 %)	43 (51.2 %)	84 (26.41 %0
Third year	35 (46 %)	41 (53.94 %)	76 (23.9%)
Fourth year	31 (44.92 %)	38 (55.07 %)	69 (21.62%)
Total	153 (48.11 %)	165 (51.89 %)	318 (100%)

Table 2: Distribution of mean score of HESI factor according to academic year

HESI factor (Min – Max Score)	1st yr (mean score ± SD)	2nd yr (mean score ± SD)	3rd yr (mean score ± SD)	4th yr (mean score ± SD)	Total (mean score ± SD)
Wfcc (3 -12)	7.04 ± 1.93	6.81 ± 1.88	6.76 ± 1.60	7.59 ± 2.25	7.05 ± 1.9
Nsc (5-20)	11.1± 2.53	11.64 ± 3.31	11.56 ± 2.93	11.16 ± 2.93	11.35 ± 2.88
Fs (7-28)	16.27± 3.49	16.58 ± 3.41	15.71 ± 3.06	16.76 ± 3.41	16.28 ± 3.3
Wl (3 -12)	7.25 ± 2.13	6.58 ± 1.89	7.00 ± 1.65	6.88 ± 1.80	6.96 ± 1.87
If (2-8)	4.68 ± 1.51	5.28 ± 1.34	4.83 ± 1.16	5.27 ± 1.47	4.97 ± 1.4
Lc (2-8)	4.50 ± 2.07	4.39 ± 2.27	4.68 ± 2.12	5.12 ± 2.04	4.68 ± 2.11
Fc (2-8)	4.89 ± 0.89	5.06 ± 1.07	5.20 ± 1.20	5.20 ± 1.29	5.09 ± 1.1
Total (24- 98)	55.43 ± 8.84	56.14 ± 7.27	56.1 ± 6.87	58.16 ± 7.87	56.42 ± 7.78

Wfcc : work for future endurance/ capacity , Nsc : non supportive climate, Fs: faculty shortcoming , Wl : workload , If : insufficient feedback , Lc: low commitment, Fc : financial concern

Table 3: Distribution of mean score of HESI factor according to sex

HESI factor (Min – Max Score)	FeMale (mean score ± SD)	Male (mean score ± SD)
Wfcc (3 -12)	7.11± 1.73	6.94 ± 2.27
Nsc (5-20)	11.66 ± 2.8	10.77 ± 2.98
Fs (7-28)	16.03 ± 3.45	16.75 ± 3.06
Wl (3 -12)	7.31 ± 1.9	6.30 ± 1.63
If (2-8)	4.90 ± 1.44	5.12 ± 1.3
Lc (2-8)	4.63 ± 2.12	4.78 ± 2.13
Fc (2-8)	5.08 ± 0.97	5.12 ± 1.37
Total (24- 98)	56.76 ± 7.68	55.78 ± 8

Also no significant difference was found sex wise as shown in table 3

Table 4: Distribution of students according to self-rate depression

Self-rated Depression	Frequency	Percentage
No	199	62.5
Mild	127	39.9
Moderate	29	9.1
Severe	27	8.5

Table 5: Correlation between the different HESI factor and MDI score

HESI factor	MDI score (19.33 ± 6.61)	Correlation
Wfcc	7.05 ± 1.9	0.354, $p < 0.01$
nsc	11.35 ± 2.88	0.253 $p < 0.01$
fs	16.28 ± 3.3	0.329 , $p< 0.01$
wl	6.96 ± 1.87	0.215 , $p< 0.01$
if	4.97 ± 1.4	0.018
lc	4.68 ± 2.11	0.101
fc	5.09 ± 1.1	0.146 $p < 0.05$
Total	56.42 ± 7.78	0.47 , $p < 0.01$