Perceived Stress and Prevalence of Depression among First Year Medical Students

Lakshmi Rajesh.ch[1], Ananda Reddy Endreddy[1], Subhani Shaik[2], Bhagawan Rajana[3]

ABSTRACT

Introduction: Modern life is full of hassles, deadlines, frustrations and demands. For many people, stress is so common that it has become a way of life. Stress is not always bad. In small doses, it can help a person perform and motivate to do the best. Procuring medical degree is tedious job. People undergo enormous stress during course of medical education. Our study was aimed to explore the patterns of stress perceived and the prevalence of depression among first year medical students.

Materials and methods: A cross sectional study was carried out in first year medical students by using Perceived Stress Scale and Zung Self Rating Depression Scale to assess the level of Perceived stress and Depression respectively. The data was analyzed by MS Excel sheet and SPSS. The difference in the patterns of perceived stress and prevalence of depression among males and females was analyzed by Chi square test.

Results: Among the study sample of 143 medical students, 58% students were females and 42% were male students. 3.5% students were scored in low stress group, 21.7% students scored in average stress, 38.5% students were scored in the group of high stress and 35.7% students were scored in very high stress group. Perceived Stress was higher in females. Number of students who scored in mild depression was 7.7% and students scored in moderate depression were 1.4%. Statistically significant correlation was observed between the high stress and prevalence of depression.

Conclusion: Our study pointed on the need of providing attention to medical students during their entire tenure, especially during exams.

Keywords: Depression, Medical Students, Prevalence, Stress.

INTRODUCTION

Medical education is inherently stressful and demanding. Overwhelming burden of information leaves a minimal opportunity for the student to relax and recreate. Stress and depression have been consistently linked to mental and physical health effects.[1] Stress amongst medical students is often overlooked.[2] Studies have proved that compared to the general population, medical students are the most distressed students.[3] An optimal level of stress, referred to earlier as 'favorable stress', can enhance learning.[4] However, excessive stress can lead to physical and mental health problems.[5] It can reduce students' self esteem and may affect academic achievement and personal or professional development.[4, 6]

Studies among medical students have found that stress is associated with anxiety and depression,[7, 8] interpersonal conflict[9], sleep disturbances[10], and poor academic or clinical performance.[11] Stress was also found to decrease attention, reduce concentration, impinge on decision-making, and reduce students' abilities to establish good relationships with patients[7]. As a consequence, students have reported feelings of inadequacy and dissatisfaction with clinical practice in the future. This may affect the lives of patients and the health of a community. Moreover, stress has also been linked to medical student suicide.[12]

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 and other parts of the world.[13-17] Epidemiological studies on depression among medical students are scanty in India.

The World Health Organization has identified depressive disorders of adolescence as "priority mental health disorder." Globally, its prevalence rate is 15 to 20% and recurrence rate is 60-70% whereas in India it is reported as 11.2%. However, studies have reported that 50% of cases remain undiagnosed. The consequences of this depression are serious, causing suicide, school dropout and drug abuse.[18]

Young medical students are no exception to this trend. Studies have already reported that depression is the most common mental disease affecting them.[19] The rate of depression and suicide has been found to be higher in medical students than other undergraduate students. Academic burden, though have been identified as source of depression,[20] cannot be changed. So other determinants of depression should be worked out which could be treated and contribute for benefit of the students.

With this background, our study was aimed to explore the patterns of perceived stress and the prevalence of depression among first year medical students.

MATERIAL AND METHODS

A cross sectional study was carried out in first year medical

[1]Associate Professor, [2]Assistant Professor, [3]Resident, Department of Psychiatry, Narayana Medical College and Hospital, Nellore, Andhra Pradesh, India.

Corresponding author: Dr. E.Ananda Reddy, Associate Professor, Department of Psychiatry, Narayana Medical College and Hospital, Nellore-524003, Andhra Pradesh, India.

2346

International Journal of Contemporary Medical Research
Volume 4 | Issue 11 | November 2017 | ICV: 77.83 | ISSN (Online): 2393-915X; (Print): 2454-7379

Score	Perceived stress level	Health concern level	Male	Female	Total
0 – 7	Much Lower than Average	Very Low	0	1	1
8 – 11	Slightly Lower than Average	Low	1	4	5
12 – 15	Average	Average	20	11	31
16 – 20	Slightly Higher than Average	High	25	30	55
21 and over	Much Higher than Average	Very High	14	37	51
Total			60	83	143
Chi square test: 4.49, p < 0.05					
Table-1: Distribution of Medical students according to Perceived Stress Scale					

Score	Status	Male	Female	Total
20-44	Normal Range	55	75	130
45-59	Mildly Depressed	4	7	11
60-69	Moderately Depressed	1	1	2
70 and above	Severely Depressed	0	0	0
Total		60	83	143
Table-2: Distribution of Medical students according to Zung Self Rating Depression Scale				

students of both sex, belonging to Narayana Medical College, in the city of nellore, Andhra Pradesh, South India. The study period was june-september 2017. Institutional Ethical Committee approval was taken before starting the study.

Inclusion criteria:
1. First year Medical students
2. Both the sex.
3. Willing to give consent

Exclusion criteria:
1. Not willing to give valid consent

The information was obtained by using a semi structured proforma that contained details of demographic data. The given questionnaire was in English language, which is the medium of instruction in all medical colleges. Students were instructed to exclude names and identifying information. Students were assured that results of survey will not have any negative repercussions for them. Perceived Stress Scale and Zung Self Rating Depression Scale were used to assess the level of Perceived stress and Depression respectively. The data was tabulated by using Microsoft office Excel sheet and further analysis was done with the help of SPSS, Version16. The responses obtained were expressed in proportions. The difference in the patterns of perceived stress and prevalence of depression among males and females was analyzed by Chi square test. Students identified with clinically significant depression were offered counseling or appropriate help.

Perceived Stress Scale (PSS)
The Perceived Stress Scale is a questionnaire used to measure a person's perception of stress over the past month and to determine the likelihood of whether perceived stress might be making them more susceptible to stress induced compromise of their health.
Perceived Stress Scale is a questionnaire comprised of 10 questions with scale ranging from 0-4 for each question. Higher Perceived Stress Scale Scores are associated with higher levels of stress and indicate a greater likelihood for

stress, interfering with things like lifestyle changes. Higher scores are also associated with increased susceptibility to stress induced illness.

Zung's Self Rating Depression Scale (ZSRDS)
This scale was preferred to others as this tool evaluates depression in normal non psychotic individuals. This scale assesses the perceived feelings of the students regarding their emotional status. The tool consists of 20 items with score ranging from 1 to 4 for each item. Total score ranges from 20 to 80. Depression was considered as a continuous variable ranging from low to high degree, of experienced feeling. Score more than or equal to 40 was considered as depression.

STATISTICAL ANALYSIS
Microsoft office 2007 was used for the analysis. Chi square test was used for analysis of p value.

RESULTS
The study questionnaires were administered in first year medical students and responses were obtained from 143 medical students. Among these 83 (58%) students were females and 60 (42%) were male students. Basing on the scores in PSS, students were divided into groups with different levels of stress [Table 1]. Only one student scored in the group of very low stress. Five (3.5%) students were scored in low stress group, 31 (21.7%) students scored in average stress, 55 (38.5%) students were scored in the group of high stress and 51 (35.7%) students were scored in very high stress group.

Comparison between the male and female students in first three groups of PSS (score 0-15) with the last two groups of PSS (score 16-40) revealed that Perceived Stress higher in females (Chi square test: 4.49, p < 0.05). Among the total sample of 143 first year medical students 106 (74%) students scored in the last two groups of PSS, who were having high and very high level of health concern.

Scores obtained in Zung Self Rating Depression Scale were in normal range for 130 (91%) students and indicates that these students were having no depression. Number of students who scored in mild depression was 11(7.7%). Students scored in moderate depression were 2 (1.4%). No student was scored in severe depression on Zung Self Rating Depression Scale [Table 2].

Comparison between the groups of students with PSS scores 0-15 (less than average to average stress) and 16-40 (high to very high stress) with the groups of students having ZSRDS

International Journal of Contemporary Medical Research
ISSN (Online): 2393-915X; (Print): 2454-7379 | ICV: 77.83 | Volume 4 | Issue 11 | November 2017

2347

Zung scores	No of students in PSS Scores (0-15)	No of students in PSS Scores (16-40)	Total
Zung scores (20-44)	37	93	130
Zung Sores (45-80)	0	13	13
	37	106	143
P < 0.05, by Fishers exact test			
Table-3: Comparison of PSS scores with Zung Self Rating Depression Scores			

scores 20-44 (No depression) and 45-80 (mild, moderate, severe depression), 93 students had scored high on PSS scale but not shown depression. Remaining 13 students who scored high in PSS had shown mild to moderate depression. Statistically significant correlation (P < 0.05, by Fishers exact test) was observed between the high stress and prevalence of depression [Table 3]. On the other side of the spectrum, 37 students scored less on both PSS and ZSRDS.

DISCUSSION

A number of studies have been conducted across the world, especially among medical students with respect to stress and its sources, depression and suicides.[13-17] Our study was a preliminary step toward understanding the extent of severity of perception of stress and prevalence and patterns of depression among first year medical college students in Indian context.

In our study the overall response rate was 95.3%. This high response rate in our study was similar to study done by Marie et al.,[21] which had shown response rate of 80% and in another study done by Hamza et al.,[22] which shown response rate of 83%.

In our study, most of students (74.12%) were in the range of high to very high scores on PSS, these findings were consistent with a study done by Priti et al.[23] A gender difference regarding stress levels was also observed, where women reported higher levels of stress than men. These findings in our study are consistent with the study done by Supe et al.,[24] Hamza et al.[25] Higher levels of stress was observed in men when compared to females in the study done by Nazma,[26] which was in contrast to our findings.

In our study, the prevalence of depression among medical students was 9.09%. Out of 143 first year medical students, 13 students (5 males and 8 females) scored in the range of depression on ZSRDS. Our findings are in accordance with the results of study done by Marie et al.,[21] and Quince et al.,[27] where the prevalence of depression ranged between 5.7% and 10.6% respectively. Higher rates of depression in first year medical students have been reported by Basnet al.[28]

In our study there was no significant association between age and sex with depression, but in a study done by Marie et al.,[21] the prevalence of depression was 16.1% among female students and 8.1% among males.

Limitations of our study
1. First year medical students were included from only one medical college.

2. Small sample size.

CONCLUSION

Medicine as a profession has always been regarded as a popular choice for professional education. This makes medical profession competitive and stressful for students. In spite of the limitations offered in our study, it does well to point a need of providing attention to medical students during their entire tenure, especially during exams.

Implications: It is suggested that larger, multi institutional and longitudinal studies to be carried out to find the sources and coping strategies to alleviate performance of students and reduce stress levels. Proper guidance and counseling by medical faculty may help to improve the present scenario.

REFERENCES

1. Hoe DC, Wah CK, Rian CA, Eliza Au E, Goud BK, Kamath U. Stress manifestations of medical students and its relation with gender and life style changes. Int Med J Stud Res 2012; 2: 37-45.
2. Jagmohni KS. Effect of Stress on Medical Students IeJSME 2007;1: 52-53.
3. Lloyd, C. and Gartrell, N.K. Psychiatric symptoms in medical students. Comprehensive Psychiatry 1984;25:552-65.
4. Kaplan HI, Saddock BJ. Sypnosis of Psychiatry: Behavioral Sciences/Clinical Psychiatry. 8th ed. Philadelphia: Lippincott Williams and Wilkins; 2000. Learning Theory; pp. 148-54.
5. Niemi PM, Vainiomaki PT. Medical Students' Academic Distress, Coping and Achievement Strategies during the Pre-clinical Years. Teach Learn Med. 1999;11:125-34.
6. Silver HK, Glicken AD. Medical Student Abuse. Incidence, Severity, and Significance. JAMA. 1990;263:527-32.
7. Shapiro SL, Shapiro DE, Schwartz GE. Stress Management in Medical Education: A Review of the Literature. Acad Med 2000;75:748-59.
8. Rosal MC, Ockene IS, Ockene JK, Barrett SV, Ma Y, Hebert JR. A Longitudinal Study of Students' Depression at one Medical School. Acad Med 1997;72:542-46.
9. Clark EJ, Rieker PP. Gender Differences in Relationships and Stress of Medical and Law Students. J Med Educ 1986;61:32–40.
10. Niemi PM, Vainiomaki PT. Medical Students' Distress—quality, Continuity and Gender Differences During a Six-year Medical Programme. Med Teach 2006;28:136-41.
11. Linn BS, Zeppa R. Stress in Junior Medical Students: Relationship to Personality and Performance. J Med Educ 1984;59:7–12.
12. Hays LR, Cheever T, Patel P. Medical Student Suicide, 1989–1994. Am J Psychiatry 1996;153:553-5.
13. Clark DC, Zedlow PB. Vicissitude of depressed mood during four years of medical school. J Am Med Assoc 1988;260:2521-8.
14. Levine RE, Litwins SD, Frye AW. An Evaluation of Depressed Mood in Two Classes of Medical Students. Acad Psychiatry 2006;30:235-7.
15. Chan DW. Depressive symptoms and depressed mood

among Chinese medical students in Hong Kong. Compr Psychiatry 1991;32:170-80.

16. Zoccolillo M, Murphy GE, Wetzel RD. Depression among medical students. J Affect Disord 1986;11:91-6.

17. 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.

18. Basker M, Moses PD, Russell S, Russell PS. The psychometric properties of Beck Depression Inventory for adolescent depression in a primary-care paediatric setting in India. Child Adolesc Psychiatry Ment Health 2007;1:8.

19. Vaidya PM, Mulgaonkar KP. Prevalence of depression, anxiety and stress in undergraduate medical students and its correlation with their academic performance. Ind J Occu Therapy 2007;39:7-10.

20. Supe AN. A study of stress in medical students at Seth G.S. Medical College. J Postgrad Med 1998;44:1-6.

21. Marie D, Nils J, Bo R. Stress and depression among medical students: a cross-sectional study 2005; 39:594–604.

22. Hamza MA. Stress and depression among medical students: A cross sectional study at a medical college in Saudi Arabia. Pak J Med Sci 2008; 24:12-17.

23. Priti S, Binita D, Abhay K, Kantharia SL. Study of psychological stress among undergraduate medical students of government medical college, Surat. Int J Med Sci Public Health 2012;1:38-42

24. Supe AN. A study of stress in medical students at Seth G.S. Medical College. journal of Postgraduate Medicine Year 1998;44:1-6

25. Hamza MA, Abdulaziz AA, Ebrahim SM, Gominda GP, Eiad AA. Stress and its Effects on medical students: A Cross sectional study at a College of medicine of Saudi Arabia. J Health Popul Nutr 2011; 29:516-22.

26. Nazma S. Stress and Depression among undergraduate Medical Students of Bangladesh. Bangladesh Journal of Medical Education 2011; 2:6-9.

27. Quince TA, Wood DF, Parker RA. Prevalence and persistence of depression among undergraduate medical students: a longitudinal study at one UK medical school. BMJ Open 2012;00:e001519.

28. Basnet B, Jaiswal M, Adhikari B, Shyangwa PM. Depression among undergraduate medical students. Kathmandu Univ Med J 2012;10:56-9.

International Journal of Contemporary Medical Research
ISSN (Online): 2393-915X; (Print): 2454-7379 | ICV: 77.83 | Volume 4 | Issue 11 | November 2017

2349