

Research Article

Stress and it's Coping Strategies in Medical Students

Mohd. Nazeer¹, Razia Sultana²

¹Assistant Professor, Department of Anatomy, Dr.V.R.K. Women's Medical College Teaching Hospital & Research Centre, Aziz Nagar, R. R. District-500075, Telangana State, India

²Assistant Professor, Department of Business Administration (MBA), Sardar Patel College, 14-Padma Rao Nagar, Secunderabad-500025, Telangana State, India

***Corresponding author**

Dr. Mohd Nazeer

Email: nazeeramr.23@gmail.com

Abstract: Medical education consists of imparting knowledge, health and development, necessary skills and applications of available sources to overcome stress. Stress in medical education is common and process-oriented. It often exerts a negative effect on their academic performance, physical health, and psychological well being. The aim was to study various stress factors, with specific objective to understand the stress factors and to know coping strategies among medical student. A cross-sectional survey was carried out among 400 medical students of 2nd to 5th year. A 35 item questionnaire was designed to assess the sources of stress and their severity. Coping strategies adopted by students were assessed by using a 14-item stress inventory, and a questionnaire based on 12 institutional stress-reducing factors was used to identify its role. Data analysis was done by using a 5-point Likert's scale. The data was collected on Microsoft Excel 2007 sheets as percentage distribution and analyzed with SPSS. Coping strategies refer to specific efforts that people adopt to reduce, tolerate or minimize stress. The most common sources of stress were related to academics. The most common coping strategies adopted by the students were meditation, interaction with friends and hobbies like music, sports, etc. The students should be taught different stress management techniques to improve their ability to cope with a demanding professional course. The overall response rate was 93%.The study provided scope for adopting strategies intended to reduce students stress. Review of academics and examination schedules and patterns, better interaction with the faculty and proper guidance, intervention programmes and counselling for the stressed ones could help a lot to reduce the stress in medical students.

Keywords: Medical students, Stress, Stress factors, Questionnaire, coping strategies, Institutional factors, Stress management.

INTRODUCTION

Medical school is recognized as a stressful environment that often exerts negative effect on the academic performance, physical health and psychological well being of the students [1]. It has been observed that academic, social, physical and emotional factors are greater perceived causes of stress in these students [2]. Identifying such susceptible students in the early phase of medical education and providing them essential support could be a useful intervention to lessen the negative consequences of stress in future.

Medical profession, although a noble profession, is not spared from stress and suicidal tendencies. Stress, if not dealt effectively loneliness, nervousness and sleeplessness is inevitable. Studies have proved that compared to the general population, medical students are the most distressed students [3].

Stress is the pressure or worry caused by problems in somebody's life. World Health Organization define 'mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to his or her community' [4]. A stressor is a personal or environmental event that causes stress [5].

Coping strategies are defined as the person's constantly changing cognitive and behavioural efforts employed to manage, reduce or control stress [1]. The students should be taught different stress management techniques to improve their ability to cope with a demanding professional course. It is an important issue for medical educators to know the prevalence and cause of student's distress which not only affects his health but also his academic achievements at different point of their study period [6].

The level of stress among medical students depends on the setting of the medical school, the curriculum and the examination system [2, 7, 8]. Stress among medical students can affect their academic performance by decreasing their attention span and affecting their decision making skill [8]. Stress in medical students is receiving attention because it has been recognized that tired, tense doctors may not provide high quality care [9].

The aim of the study reported here was to assess the perceptions of medical students of stress factors, their sources, the coping strategies they use and the institutional factors to relieve the stress.

MATERIAL AND METHODS

A cross-sectional study was carried out with 370 students of DR. V.R.K. Women’s Medical College, Hyderabad during the period from June 2014 to October 2014. A structured questionnaire was designed to know the factors inducing stress, how students are coping with stress and institutional factors that could help in reducing the stress. The questionnaire was broadly classified into three categories: stress-inducing factors, coping factors and institutional stress-relieving factors. Each batch of students was briefed about the purpose and objective of the study.

Data analysis was done by using Likert’s [10] scale and results were tabulated in the form of

percentage. Subjects who refused to participate in the study or if a student who was absent on the day of study and/ or could not be contacted even after two visits were considered as non-respondents. They were assured confidentiality and given option to refuse to participate in the study.

The stressors included in the questionnaire were derived by reviewing the literature [2] and by holding informal discussion with a group of students [2, 11]. A total of 35 sources of stress were listed and grouped as academic, physical, social, emotional factors and hostel related issues. For each potential stressor, the frequency of occurrence was rated using a Likerts [10] scale has- never, rarely, sometimes, often and always and scored as 1,2,3,4 and 5 respectively. Coping strategies adopted by students were assessed by using a 14-item stress inventory and a questionnaire based on 12 institutional stress-reducing factors was used to identify its role.

The study was approved by the ethical committee of the institute. The verbal consent of the students was taken before the study was done.

RESULTS AND DISCUSSION

Out of 400 students, 370 returned the completed questionnaire indicating a response rate of 93%.

Study population

Table 1: The number of medical students participating in the study

Year of study	Number of respondent	Response Rate (%)
2 nd	90	90
3 rd	94	97
4 th	100	97
5 th	86	91
Total (400)	370	93

Hostel stressors

Table 2 shows the association of stressors with hostel students (120). Home sickness was the most common source of stress in second year students (72%). Among the third year students, the most common source of stress was living conditions in hostel (86%). In the fourth year students, the living conditions in hostel and home sickness were both equally responsible

(82%) as a source of stress in them. For fifth year students, lack of study environment and home sickness were the next common sources of stress observed in 63% and 57% of these students. The quality of food in hostel was the most common stressor in students of 5th year (70%). In students of 2nd, 3rd and 4th year, the quality of food was the second most common source of stress (63% to 78%).

Table 2: Association of stress factors with students in hostel

Hostel Stressors	Number (%)			
	Second Year	Third Year	Fourth Year	Fifth Year
Adjustment with room-mate/s	08(25)	10(28)	04(18)	04(13)
Quality of food	20(63)	28(78)	15(68)	21(70)
Living conditions in hostel	19(59)	31(86)	18(82)	16(53)
Lack of study environment	11(34)	09(25)	09(9)	19(63)
Home sickness	23(72)	21(58)	18(82)	17(57)

Academic stressors

As shown in table 3, students of all years were quite stressed by the academic stress factors. Vastness of academic curriculum was the first most common source of stress among students of 2nd, 4th and 5th year (64% to 87%). The frequency of examinations was the second most common stressor among the students of 2nd, 4th and 5th year (58% to 67%). Among the third year students, frequent exams (76%) was the most common stressor followed by vastness of academic curriculum (61%) and non availability of adequate clinical material

(51%). For the 2nd and 4th year students, time management was the third most common stress factor (46% & 44%). For the fifth year students, inadequate clinical material and difficulty in reading vast medical text books was seen in 49% of the students. They also faced difficulty in time management which was observed in 46% of the students. Difficulty in understanding the topic, quality of teaching and difficulty in memorizing facts were the least common stressors among all students.

Table 3: Association of academic stressors with year of study

Academic Factors	Number (%)			
	Second Year	Third Year	Fourth Year	Fifth Year
Vastness of academic curriculum	70(87)	57(61)	64(64)	72(84)
In adequate clinical material	30(33)	48(51)	40(40)	42(49)
Lack of special guidance from faculty	18(20)	21(22)	22(22)	30(35)
Academic competition with peers	24(27)	20(21)	22(22)	12(14)
Difficulty reading vast medical books	38(42)	23(24)	31(31)	42(49)
Difficulty in understanding the topic	09(10)	05(5)	11(11)	06(7)
Time management	41(46)	31(33)	44(44)	40(46)
Inadequate facilities-library, internet, books	36(40)	40(43)	38(38)	36(42)
Quality of teaching	08(9)	15(16)	07(7)	15(17)
Difficulty memorizing facts	18(20)	12(13)	20(20)	17(20)
Frequency of examinations	60(67)	71(76)	58(58)	56(65)

Social stressors

Table 4 shows the social stressors. Indifferent/Biased behaviour of teachers (10% to 33%) was the most common stressor among students of all

the years. Financial problems were the second common stress factor in students of 2nd, 4th and 5th year. Conflict with friends and seniors was the second common stressor in 3rd year students.

Table 4: Association of social stressors with year of study

Social Factors	Number (%)			
	Second Year	Third Year	Fourth Year	Fifth Year
Financial problems	13(14)	10(11)	09(9)	13(15)
Inability to socialize with peers	07(8)	8(9)	04(4)	08(9)
Indifferent/Biased behaviour of teachers	14(16)	18(19)	10(10)	28(33)
Conflict with colleagues / seniors	12(13)	17(18)	06(6)	04(5)

Physical stressors:

Table 5 shows the stressors related to physical factors. 'Not enough time for revision' was the first most common stressor among all students. Fifth year students were stressed more by not enough time for revision (73%) as compared to 2nd, 3rd and 4th year students. Lack of time for recreational activities was the

next most common source of stress among all students, which was more in 3rd year students (64%) compared to 2nd, 4th and 5th year students. Difficulty in the journey back home was the third most common stressor among students of all the years (48% to 59%) which are more in 3rd and 4th year students compared to 2nd and 5th year students.

Table 5: Association of physical stressors with year of study

Physical Factors	Number (%)			
	Second Year	Third Year	Fourth Year	Fifth Year
Lack of entertainment	40(44)	45(48)	56(56)	31(36)
Lack of time for recreational activities	57(63)	60(64)	61(61)	49(57)
Difficulty in the journey back home	51(57)	55(59)	59(59)	41(48)
Sleeping difficulties	28(31)	26(28)	32(32)	29(34)
Physical health problems	10(11)	13(14)	09(9)	07(8)
Studying late nights	31(34)	28(30)	30(30)	22(26)
Lack of proper canteen facilities	33(37)	32(34)	32(32)	40(46)
Not enough time for revision	60(67)	61(65)	63(63)	63(73)

Emotional stressors

Table 6 shows the stressors related to emotional factors. High parental expectations was the most common stressor among 2nd, 3rd and 4th year students, followed by fear of failure in exams in 2nd and 3rd year students. Stress due to fear of failure in exam is significantly more in 5th year students as compared to

students of 2nd, 3rd and 4th year. Among the 5th year students, the next most common stressors were fear of unemployment after graduation and insecurity regarding professional future. Among the 4th year students, the next common stressors were insecurity regarding professional future and fear of failure in exams.

Table 6: Association of emotional stressors with year of study

Emotional Factors	Number (%)			
	Second Year	Third Year	Fourth Year	Fifth Year
High-parental expectations	41(46)	37(39)	44(44)	34(40)
Family problems	11(12)	13(14)	13(13)	08(9)
Fear of unemployment after graduation	09(10)	14(13)	25(25)	37(43)
Fear of failure in exams	35(39)	33(35)	37(37)	44(51)
Inapproachability of teaching staff	10(11)	12(13)	22(22)	26(30)
Insecurity regarding professional future	20(22)	23(24)	42(42)	36(42)
Lack of confidence	14(16)	15(16)	16(16)	15(17)

Coping strategies adopted by students

The response to each coping strategy given by students was used to evaluate which strategies are the most preferred ones for managing stress. Table 7 shows the coping strategies arranged in decreasing order of number. It is evident that 88% of students use ‘Meditation’ to get rid of stress. This emerged out as the most dominating coping strategy. Following this, ‘Interaction with friends and family members’ was the

next preferred coping strategy adopted by 82% of the students. This was somewhat more practiced amongst hostel students (70%) as compared to day scholars (68%). Another highly preferred strategy was ‘Hobbies’ like music, sports, etc adopted by 79% of students. Few other strategies like use of Internet, television, movies, mobile phones, shopping, sleeping, physical activity and going out for dinner/walk were adopted by more than 60% of the students to relieve themselves of stress.

Table 7: Association of coping strategies adopted by students under stressed situation arranged in decreasing order

Coping Strategies	Number	Percentage
Meditation-Praying / Yoga	325	88
Interaction with friends and family members	302	82
Hobbies like music, sports, etc.	292	79
Going out for dinner / walk	286	77
Internet/TV/Movies/Mobile phone	274	74
Go to sleep	270	73
Physical activity / Exercise	239	65
Shopping / Window shopping	229	62
Take time to relax	222	60
Proper study planning	222	60
Maintain a healthy diet	204	55
Reading literary non-medical works	170	46
Eat more than usual	82	22
Medication	15	04

Institutional stress-reducing factors

The institutional factors contributing to stress reduction were rated by students on 5-point Likerts scale [10]. Table 8 shows the institutional factors arranged in decreasing order of number. It is evident that ‘Vacations and holidays’ could contribute most in reducing the stress. It is highly preferred factor that

assists in mind diversion from routine activities, thereby to relieve the stress. Moreover, students residing in hostels have preferred this factor as highly effective in managing stress. Also, students believe that encouraging ‘Personal hobbies’, ‘College Picnics’ and improving entertainment facility by institution could substantially help in managing the stress.

Table 8: Association of Institutional factors responsible for managing stress as perceived by students arranged in decreasing order

Institutional Factors	Number	%
Vacations and holidays	334	90
College picnics	301	81
Entertainment facility at College (Sports club, Music & Art gallery)	297	80
Guidance from Lecturers / Mentors	283	76
Extra-curricular activities –Hobbies	274	74
Participating in college feast / functions	260	70
Changes in academic environment, teaching & learning	252	68
Relaxing at college canteen	248	67
Guidance from seniors	182	49
Making new friends	171	46
Professional help: Doctor/ Psychiatrist/ Counsellor	153	41
Health programmes on Stress Management	149	40

This study confirmed that there is considerable amount of stress in medical students. This is similar to previous studies which have reported such findings [2, 12].

During the study period, some problems like difficulty in understanding the topic and memorizing facts, not enough time for revision and uncomfortable environment becomes the source of stress among the students. These may occur due to lack of proper planning that has been done by the students before the start of a semester. The students have to give maximum effort in their study to avoid these problems to occur.

Personal matters may sometimes become a source of stress among students. Some of the problems that students have always faced are relationship problems with family, friends, or faculty, home sickness, family problems, financial and transportation matters. To overcome these problems, the students should have a proper control over their emotional status.

Students staying in hostel have more concern about the hostel environment, friends and food facilities as compared to day scholars. The hostel related issues and recreational facilities should be resolved as far as possible within limited resources. Although these facilities were available in the institution they were felt to be inadequate by the students. These factors need to be explored in detail in a future study.

The college organizes Parent-Teachers Meeting (PTM) on regular basis in order to know the progress of the student. They also give some guidance to the needful students along with moral support. It also organizes 'College Feast' every year that enabled the students to improve their social contacts. For security reasons and proper time management the college transport system has been made mandatory for all

students which were felt to be inadequate by the students.

The coping strategies adopted by students were meditation, interaction with friends and family members, hobbies like sports, music, etc, use of internet, television, mobile phone and watching movies. Only a handful of students had adopted strategies like taking medicines to sleep better (4%). Praying or performing spiritual activities was the most common coping strategy for students in all academic years, since it provides calmness and hope for a better life. It is found that students who received more social support tend to have less stress; such social support can come from teachers, parents or other students. Music and movies were also adopted by more than 74% of the students. They are a form of entertainment which is believed to nourish and soothe the mind, thus enabling students to relax. Many medical students are able to cope with their problems by sharing their problems with their classmates, friends and family members [13].

The study found that the major institutional stress-relieving factors as perceived by the medical students were-'Vacations and holidays', 'College picnics' and 'Personal hobbies like music and sports'.

The present study showed that examinations are a common source of stress among medical students, as studied previously [2, 7, 14, 15], however, they are important for evaluating student performance, encourage students to learn and provide feedback to instructors. Some students perceive exams as a burden while others consider them helpful for learning. Therefore, it is suggested that medical educators should monitor the psychological impact of modifying curricula in order to prevent stress and depression [16]. Fear of failure which is a very serious concern to medical students, is mainly because of the enormous syllabus to be covered in a limited time.

It was encouraging to find that only a small group of students (19%) found difficulty in approaching the teachers. That indicates the strong student teacher relationship in our college. The faculty has to concentrate on under achievers in lecture hours, demonstration classes and during the practical hours. They have to be strict, impartial, guiding and encouraging towards students.

The aim should be to make the students aware of stress and its management. It is suggested that each institute should have its own orientation programme and counselling services [17]. Healthy life style such as eating balanced diet, regular exercise, practising meditation and listening to soft music will help to relieve the stress [18]. Various methods have been adopted in different institutions for stress management. These include measures such as psycho educational lectures, seminars on stress management and counselling [19].

In a study at G.S. Seth Medical College, Mumbai, India, a 'shidori' system of stress management has been described. This incorporated in many co curricular activities that deal with topics like group dynamics, communications, coping skills, time management and assertive behaviours [18].

Stress reducing factors like role of friends, hobbies and teachers behaviour have also been evaluated [2]. A lot can be achieved if students increased their social interactions. A good relationship with seniors and faculty members, support from friends (buddy programmes), family and perhaps religious groups can help [20]. All these group activities reduce stress and improve coping.

As students turn to their teachers and classmates for support, it would be beneficial to setup a Student Mentorship Programme. One such mentorship programme implemented at NKPSIMS and RC, Nagpur, is ANUBANDH wherein one teacher is the mentor for a group of ten students. Each group meets once in a month and discusses curricular, co-curricular and problems pertaining to institutional support system like food in canteen, personal health, etc. As the group involved senior and junior students, it helped in minimising inhibitions, solving problems, promoting healthy habits and giving emotional support to each other [21].

By identifying stressors affecting students, necessary modifications can be made to improve the quality of life of medical students. As stress in our colleges cannot be eliminated, appropriate measures may be undertaken to alter the student maladaptive perceptions and reactions to those events.

As the study had been undertaken in a private medical college, all results cannot be generalized for the medical undergraduate's population. Despite good response rate, another limitation of our study may be that of non response bias. It would have been advantageous to interview a sample of non respondents to assess their experiences and psychological status. Anonymity and confidentiality of the respondents was ensured in the questionnaire. Hence we did not have the identity of these students to interview the non respondents on a separate occasion.

CONCLUSION

In the present study, an attempt has been made to identify the stress profile of medical students. The study confirms the findings of other studies, that the prevalence of perceived stress is high among medical students. Academic related problems are the greater perceived stressors. Review of academics and examination schedules and patterns, better interaction with the faculty and proper guidance, intervention programmes and counselling for the stressed ones could help a lot to reduce stress in medical students. It is time to make medical education interesting, restore enthusiasm in the students and to project a more realistic, human image of the profession. This would decrease the amount of stress and its consequences.

Acknowledgement

I thank all the students who participated in this study for their valuable time given for filling up the questionnaire. I would like to thank Dr A. Y. Chary, Dean and Dr Sarib Rasool Khan, Managing Director of Dr. V. R. K. Women's Medical College for their continuous inspiration and support. I would finally thank my colleagues who have helped me in this work. This study did not receive any funding.

REFERENCES

1. Mosley TH, Perrin SG, Niral SM, Dubbert PM, Grothues CA, Pinto BM; Stress, coping, and well-being among third-year medical students. *Acad Med.*, 1994; 69(9): 765-767.
2. Supe AN; A study of stress in medical students at Seth G.S. Medical College. *J Postgrad Med.*, 1998; 44(1): 1-6.
3. Lloyd C, Gartrell NK; Psychiatric symptoms in medical students. *Comprehensive Psychiatry*, 1984; 25(6): 552-565.
4. World Health Organization; Promoting mental health: concepts, emerging evidence, practice: a report of the World Health Organization, Department of Mental Health and Substance Abuse in collaboration with the Victoria Health Promotion Foundation and the University of Melbourne. Geneva, 2005.
5. Lazarus RS; Theory-Based Stress Measurement. *Psychology Inquiry*, 1990; 1:3-13.

6. Abdulghani HM, Alkhanhal AA, Mahmoud ES, Ponnamparuma GG, Alfaris EA; Stress and its effects on medical Students: a cross-sectional study at a college of medicine in Saudi Arabia. *J Health Popul Nutr*, 2011; 29(5): 516-522.
7. Stewart SM, Betson C, Marshall I, Wong CM, Lee PWH, Lam TH; Stress and vulnerability in medical students. *Med Educ*, 1995; 29(2): 9-27.
8. Dahlin ME, Runeson B; Burnout and psychiatric morbidity among medical students entering clinical training: a three year prospective questionnaire and interview-based study. *BMC Med Educ.*, 2007; 7: 6.
9. Firth-Cozens J; Doctors, their wellbeing, and their stress. *BMJ*, 2003; 326(7391): 670-671.
10. Likert RA; Technique for the measurement of attitudes. *Archives of Psychology*, 1932; 22(140): 55.
11. Sreeramareddy CT, Shankar PR, Binu VS, Mukhopadhyay C, Ray B, Menezes RG; Psychological morbidity, sources of stress and coping strategies among undergraduate medical students of Nepal. *BMC Med Educ*, 2007; 7: 26.
12. Shah M, Hasan S, Malik S, Sreeramareddy CT; Perceived stress, sources and severity of stress among medical undergraduates in a Pakistani Medical School. *BMC Med Educ*, 2010; 10: 2.
13. Sidik S, Rampal L, Kaneson N; Prevalence of emotional disorders among medical students in a Malaysian University. *Asia Pacific Family Medicine*, 2003; 2(4): 213-217.
14. Saipanish R; Stress among medical students in a Thai medical school. *Med Teach.*, 2003; 25(5): 502-506.
15. Ko, SM, Kua EH, Fones CSL; Stress and the undergraduates. *Singapore Med J.*, 1999; 40(10): 627-630.
16. Moffat KJ, McConnachie A, Ross S, Morrison JM; First year medical student stress and coping in a problem-based learning medical curriculum. *Med Educ*, 2004; 38(5): 482-491.
17. Rodolfa E, Chavoor S, Velasquez; Counseling services at the University of California, Davis: Helping medical students cope. *Journal of the American Medical Association*, 1995; 274(17): 1396-1397.
18. Kate MS, Kulkarni UJ, Shetty YC, Deshmukh YA and Moghe VV; Acknowledging stress in undergraduate medical education and methods of overcoming it. *Current Research Journal of Social Sciences*, 2010; 2(5): 282-287.
19. Rathbun J; Helping medical students develop lifelong strategies to cope with stress. *Academic Medicine*, 1995; 70(11): 955-956.
20. Mouret GML; Stress in graduate medical degree. *Medical Journal of Australia*, 2002; 177(Suppl): S10-S11.
21. Gade S, Chari S, Gupta M; Perceived stress among medical students: To identify its sources and coping strategies. *Archives of Medicine and Health Sciences*, 2014; 2(1) 80-86.