

A comparative study of perceived stress among students of medical and other professional courses

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Abstract

Objective: The purpose of the study is to compare the stress levels of medical students with that of other professional courses. **Background:** Stress invariably affects the abilities of the students which might be in the form of learning difficulties, or deterioration of physical and mental health. **Methods:** The study was conducted at educational institutes of southern India on 300 students, 150 each from medical and other professional colleges. Cohen's stress scale was used to categorize level of stress into mild, moderate and severe. **Results:** Stress levels were found to be significantly higher in medical students as compared to other professional course students. The prevalence of perceived stress among medical students was 91% (67.7% moderate stress and 23.3% severe stress) as compared to 82% of other professional courses students (70% moderate stress and 12% severe stress). **Conclusion:** The present study shows that stress among medical students is more than in students of other professional courses. Medical students need regular counselling sessions, recreational and physical activities to overcome stress.

Key Word: Stress levels; Comparison; Medical students

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INTRODUCTION

In human life, stress is an unavoidable phenomenon, an emotional imbalance because of various circumstances or situations of life such as examinations at regular interval, assignments, competition in the field selected, future job worries, financial constraint.¹ Generally Medical education is expected to be stressful, as it is characterized by many psychological changes in students as Medical students bear the brunt of high level of stress during their academic and undergraduate course shown by various studies.²⁻⁶ The majority of studies on stress in medical

education focus on the documentation of stress and information on the correlates of stress.⁵⁻⁸ If the stress level is high it may have negative effect on cognitive functioning and learning abilities of students in medical school.⁷ Various studies have suggested that mental health was affected or declined after joining into medical course and it was the same or deteriorated throughout the course period.² According to the National Institute of Mental Health, Bangalore; nearly a quarter mental health services are required on the campus.⁴ This is because excessive stress in students has led to increase in prevalence of psychological problems.⁵ It is a major public health concern as identification and treatment of these psychiatric problems among students, is a challenge.⁹ Studies around the globe have emphasized that students studying in medical courses experience higher stress.¹⁰⁻¹³ Medical and dental students have annual examinations where as Engineering students take half-yearly examinations, theoretically, the higher frequency of examinations should lead to a higher prevalence of stress among engineering students. However, there are very few studies on the comparison of Stress among medical and other professional courses students,

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especially in India. So, present study was undertaken in order to assess the prevalence of stress among students of medical, dental and engineering colleges, and the association of stress with various academic, social and health-related factors.

MATERIAL AND METHODS

A cross sectional study was conducted in an Educational Institute of Telangana, India from May 2018 to August 2018. The study population was Medical, Dental, Nursing, pharmacy, Physiotherapy, and engineering students.

Sample size: Assuming the prevalence as 75.8%¹⁴ and absolute precision of 10%, the minimum sample size required was found to be 127 for medical and 127 for nonmedical students. So, 150 medical and 150 nonmedical students were included in the study. Ethical clearance was obtained prior to the study from Ethical Committee, permissions from respective colleges were obtained from college authorities.

Study procedure: List of all students from medical college was obtained and 150 medical students from this list were selected by systematic random sampling. List of all students from dental, pharmacy, engineering, nursing and Homeopathy was obtained. 30 students from each college were selected by systematic random sampling. The purpose of the study and questionnaire was explained to the study subjects. An informed written consent was obtained from all the students, a self-administered

questionnaire consisting of socio demographic profile and Perceived stress scale was distributed to them. Perceived stress scale is a self-reported instrument to measure the degree to which situations in one's life are appraised as stressful. It was developed by Sheldon Cohen and his colleagues in the year 1983. It is a validated scale with reliability and Crohbach's alpha of 0.91. It consisted of 14 items and later on in year 1988, it was reduced to 10 item scale. Each item is rated on a 5- point scale ranging from never (0) to almost always.³ Positively worded items are reverse scored (items 4, 5, 7 and 8) and the ratings are summed, with higher scores indicating more perceived stress. Scores ranging from 0-13 is considered as low stress, scores from 14-26 as moderate stress and 27-40 as high stress.¹²

Statistical analysis: In this study perceived stress scale developed by Cohen was used. The data thus obtained was entered and analyzed using SPSS version 25. Quantitative variables such as age, stress scores were summarized using mean and standard deviation. Qualitative variables such as gender, place of stay etc., were summarized as percentages. The stress was categorized as mild, moderate and severe. Percentage of students was calculated in each category of stress level. Association of various factors with stress was evaluated by chi square test. t test was used to compare stress among medical and non medical students.

RESULTS

Table 1: Demographic Profile

Parameters	Medical students		Students of other Professions		
	NO	%	NO	%	
Age	<20	66	44	101	67
	>20	84	56	49	33
Sex	Male	32	21	63	42
	Female	118	79	87	58
Religion	Hindu	111	74	114	76
	Muslim	19	13	23	15
	Christian	18	12	13	9
Residence	Others	2	1	0	0
	Rural	10	7	31	21
Family Income	Urban	140	93	119	79
	<50000	85	57	57	38
	50000-100000	40	27	50	33
	100000-150000	19	13	43	29
	150000-200000	3	2	0	0
Family Member	>200000	3	2	0	0
	<3	20	13	15	10
	>3	130	87	135	90

Table. 1 shows that in Medical group 44% of students were below 20 years and in nonmedical group 67 % were below 20 years. Females students were more than males in both the groups. Among Medical group 74 percent were Hindus as compared to 76% in other professions. Medical students from urban area were 93% and 79% students from other professions were from urban area.

Table 2: Comparison of no of students stressed in medical and other professions

	Medical	Nonmedical
Stress	137	124
Low stress	13	26

P = 0.025 < 0.05 chi square value - 4.98

Table no 2 shows that stress was significantly more in medical students as compared to other professional group of students.

Table 3: Association of stress with demographic variables among other professional courses

		stress	low stress		
Sex	Male	49(percentage)	14	P <0.05	chi
	Female	80	7		
Religion	Hindu	94	20	p=0.26	f test
	Muslim	21	2		
	Christian	9	4		
Residence	Rural	30	1	p<0.05	f test
	Urban	94	25		
No of family Members	<3	15	0	p>0.05	f test
	>3	132	3		
Socioeconomic classification	MKS 1	45	12	P=0.62	chi
	2	42	8		
	3	37	6		

In students of other professional courses stress was significantly associated with female sex and Residence.

Table 4: Association of stress with demographic variables among medical students

		Stress	Low stress		
Sex	Males	25	7	P< 0.05	chi square test
	Females	108	10		
Religion	Hindu	101	10	p.0.05	
	Muslim	17	2		
	Christian	17	1		
	others	2	0		
Residence	Rural	9	1	p>0.05	f test
	Urban	128	12		
No of family Members	<3	14	6	P< 0.05	f test
	>3	118	12		
Socioeconomic classification	MKS 1	78	7	p>0.05	f test
	2	34	6		
	3	20	1		
	4	6	4		
	5	3	3		

In medical students stress was significantly associated with more than 3 family members and female sex

Table 5: Sources of stress in medical students and students of other professional courses

	Medical	Students of other professional courses	P value
Academic burden Due to			
Syllabus	120	90	0.0001
Frequency of examination	124	85	0.00001
Fear of failure in examination	110	75	0.0003
Lack of recreation	75	67	0.35
Psychological stress due to			
Family pressure	96	80	0.06
Money constraint	108	90	0.02
Lack of friends	25	24	0.87
Relationship failures	20	18	0.72
Environmental Stress due to			
Up down to college by bus	100	70	0.0004

Living in hostels	80	70	0.24
Relationship with friends	76	70	0.48
Quality of food	75	65	0.24

Academic factors such as syllabus burden, frequency of examination, fear of failure in examination were significantly more in medical students as compared to the students of other professional courses.

DISCUSSION

The overall prevalence of perceived stress in our study was 87%. The prevalence of perceived stress among medical students was 91% (67.7% moderate stress and 23.3% severe stress) as compared to 82% of other professional courses students (70% moderate stress and 12% severe stress). A study done by Gupta *et al* the overall prevalence of stress was estimated as 91.1% which is similar to our study.¹⁶In a study done by Anuradha *et al* showed prevalence of the stress as more than 90.¹⁷In a study done by Naveen *et al* 33.6% of the total medical and engineering students were stressed, which is different from our study.⁹In study done by Vivek B. Waghachavare *et al*, out of the total respondents, stress was present in 299 (24.42%); of these, mild stress was present in 123 respondents (10%), while 93 (7.6%) had moderate stress and 83 (6.8%) had severe stress which is different from our study.¹⁵The observed prevalence of stress in medical students by Abdulghani *et al.*, in Saudi Arabia was 63.8%.which is different from our study.¹⁸ In a study conducted on dental students by Abu-Ghazaleh *et al.* in Jordan, stress was observed in 70% of the respondents.¹⁹In India, Supe observed the presence of perceived stress in 73% of students.¹³ Mean stress score in this study was 20.95 ± 6.34 in medical students and MSS in students of other professional courses was 19.43 ± 6.56 . In the study done by Anuradha *et al*, the mean perceived stress score was 25.64 ± 5.44 .in medical students.¹⁷ In a study done by Vivek B. Waghachavare *et al*, stress was observed in 187 female respondents (27.7%) as compared to 112 male respondents (20.4%). Like our study the statistical difference in association of gender stress was observed in this study.⁹Al-Dabalet *et al.* observed a greater prevalence of stress in medical students in comparison with non-medical students in Saudi Arabia which is similar to our study.¹¹In our study academics were most responsible for the stress among medical students which is similar to studies done by by Al-Dabal *et al.*, Abu-Ghazaleh *et al.* and Behere *et al.*^{11,19,20} Similar study with large sample size can be used to generalize the results.. An Interventional study with yearly follow up of same set of students will be more conclusive to our findings.

CONCLUSION

All students are exposed to stress irrespective of their course of study but in our study stress among medical

students was more as compared to students of other professional courses. Academic burden environmental social and psychological stress all play important role in development of stress, a detailed study has to be done about half yearly examination pattern and curriculum of other courses to reduce stress among students, newer teaching methods has to be adapted based on student needs. Regular counseling sessions should be given in colleges about reducing stress apart from teaching academics, role of meditation and physical activity has to be introduced or encouraged.

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