

# Prevalence of perceived stress among first year under graduate medical students of a private medical college, Thrissur, Kerala

Divya M\*, Navya C J\*\*, Vidhu M Joshy\*\*\*, Aswathy M G\*\*\*\*

\*Medical Student, \*\*Assistant Professor, \*\*\*Statistician, \*\*\*\*Post Graduate Student, Department of Community Medicine, Amala Institute of Medical Sciences, Amala Nagar, Thrissur-680555, Kerala, INDIA.

Email: [cjnavya710@gmail.com](mailto:cjnavya710@gmail.com)

## Abstract

**Background:** Stress is any uncomfortable emotional experience accompanied by predictable biochemical, physiological and behavioural changes. Medical education is highly stressful compared to other courses. **Objectives:** To assess the prevalence of perceived stress among first year medical undergraduate students of a private medical college in Kerala and to find out the factors associated. **Methodology:** A cross sectional study was conducted among first year medical students at Amala Institute of Medical Sciences, Thrissur. A total of 100 students participated in the study; Self-administered pre-tested questionnaire was used which included PSS -10 and MSSQ. **Results:** Using PSS-10, 73% of the students experienced moderate stress and 20% experienced severe stress. According to MSSQ 97% of students experienced severe stress. Vastness of academic curriculum (82%) and fear of failure in exam (81%) were the common stressors experienced. It was also found that there is a positive correlation between the two stress questionnaires ( $r=0.312$ ,  $p=0.002$ ). The factors associated with perceived stress were mother's educational status and syllabus of schooling. **Conclusion:** Majority of the students experienced moderate to high level of stress.

**Keywords:** Cross sectional study, First year medical students, MSSQ, Perceived stress

## \*Address for Correspondence:

Dr. Navya C J, Assistant Professor, Department of Community Medicine, Amala Institute of Medical Sciences, Amala Nagar, Thrissur-680555, Kerala, INDIA.

Email: [cjnavya710@gmail.com](mailto:cjnavya710@gmail.com)

Received Date: 20/01/2019 Revised Date: 26/02/2019 Accepted Date: 13/04/2019

DOI: <https://doi.org/10.26611/10111133>

## Access this article online

Quick Response Code:



Website:

[www.medpulse.in](http://www.medpulse.in)

Accessed Date:  
14 September 2019

## INTRODUCTION

Stress is defined as the physical, mental, or emotional and financial strain or tension.<sup>1</sup> Medicine is an emotionally demanding training and therefore a career in medical education can sometimes be stressful<sup>2</sup>. Stress may be due to exhausting working hours, striving for earning high grades, peer pressure etc<sup>3</sup>. Other possible sources of stress may include enormous syllabus to be covered in a limited

period, understanding of new concepts, lack of proper guidance, thought of appearing or failure in exams, social stress, relationship with peer groups, hostel friends, senior teachers, displacement from home, the expectation of parents, inadequate hostel facility etc<sup>4</sup>. Stress experienced by the medical students start from the beginning of the training process<sup>5</sup>. Worldwide, medical colleges are responsible for making sure that the medical students have the adequate knowledge and skill before taking professional responsibilities<sup>6</sup>. In order to achieve these goals, medical colleges typically use a curriculum of lectures; simulations supervised practice, mentoring and hands on experience to boost individual skill set. Unfortunately, some aspects of the training have intended negative consequences on students physical and emotional health<sup>7</sup>. The study is conducted mainly to assess the prevalence of perceived stress among first year medical undergraduates of a private medical college in Kerala and also to find out the associated factors.

**How to cite this article:** Divya M, Navya C J, Vidhu M Joshy, Aswathy M G. Prevalence of perceived stress among first year under graduate medical students of a private medical college, Thrissur, Kerala. *MedPulse International Journal of Community Medicine*. September 2019; 11(3): 54-57. <https://www.medpulse.in/>

## MATERIALS AND METHODS

A cross-sectional study was conducted among first year medical students at Amala Institute of Medical Sciences, Thrissur. A total of 100 students were participated in the study. The participants were asked to complete a pre-tested and pre-designed questionnaire that included a list of sources of stress, Perceived Stress Scale – 10 (PSS-10) and Medical Students Stress Questionnaire (MSSQ). The methodology and the purpose of the study was well explained to all the participants and informed consent was obtained. We included all the medical students currently studying the first year excluding the repeaters of the first year. The questionnaire was divided into four parts for the better assessment of stress. The first part was framed to probe the demographic and general information about the participants, the second part dealt with perceived stress, third part dealt with sources of stress and the fourth part dealt with Medical Students Stress Questionnaire. Perceived stress scale developed by Sheldon Cohen. It measures the perception of stress. A newly developed instrument, the Medical Students Stress Questionnaire (MSSQ), was used to identify the source of stress. The collected data was statistically analysed by using the Statistical Package for Social Sciences (SPSS) 23 software. A ‘p’ value of less than 0.05 was taken as statistically significant.

## OBSERVATIONS and RESULTS

**Socio demographic details:** From a total of 100 medical students, all of them filled and returned the questionnaire. Females were 62 and males were 38. Mean age was 19.71(SD=0.924) [Table 1]. 58% were Christians followed by Hindu (33%) and Muslim (9%). Majority of

mothers (40%) and fathers (45%) were graduates. The mother’s of most of the students were housewives (37%) and father’s were unskilled workers (55%) followed by professional (20%). Majority of students studied in English medium schools (94%). Among them majority studied in CBSE (71%).

**Perceived Stress Scale –10 scores:** According to PSS-10, majority of the students experienced moderate stress (73%) and high stress was experienced by 20% of the students (Table 2). The common stressors faced by the medical students were vastness of academic curriculum (82%), fear of failure of exams (81%), frequency of exams (65%), and lack of recreation(56%)(Table 3). There was statistically significant association between PSS -10 score and educational status of the mother, that is stress increased with higher educational status of the mother [Table 7]. Likewise there is a statistically significant association between syllabus of schooling and PSS – 10 scores. (p=0.03)[Table 8]. When gender and PSS were studied, moderate stress among girls (79%) were higher than that of boys(63.15%) and high stress among boys were higher(23.68%) than girls(17.74%) but this was not found to be statistically significant (p=0.018)[Table 5]. There was no association between religion and PSS-10 score (p=0.08) [Table 6] , similarly father’s educational status(p=0.569), father’s occupation (p=0.56) and mother’s occupation (p=0.14).

**MSSQ Score:** According to MSSQ score, majority of the students suffered from severe stress (97%)[Table 4]. We found a positive correlation between PSS and MSSQ by calculating the Pearson correlation coefficient (r). The r value was 0.312 and p value was 0.002. p value <0.05.

**Table 1:** Distribution of the students by age

Age	Frequency
18	9
19	31
20	43
21	14
22	3
Total	100

Mean age was found to be 19.71 (SD=0.924).

**Table 2:** Distribution by PSS-10 Score

PSS TOTAL CODE	Percent
Low stress (score 0-13)	7
Moderate stress (score 14-26)	73
High stress (score 27-40)	20
Total	100

**Table 3:** Distribution by PSS-10

Sources of stress	Yes	No
	Percent	Percent
Vastness of academic curriculum	82	18
Frequency of exam	65	35
Competition with peer group	32	67
Lack of recreation	56	44
Travel between home and college	8	92
High parental expectations	40	60
Loneliness	29	71
Family problems	11	89
Quality of food at mess or home	30	70
Living conditions at hostel or home	17	83
Financial problems	26	74
Fear of failure of exams	81	19
Relation with opposite sex	11	89
Accommodation away from home	22	78
Adjusting with roommates and neighbours	18	82

**Table 4:** Distribution by MSSQ score

Mssq Total Code	Frequency
Mild to moderate stress (score 55-81)	3
Severe stress(score ≥82)	97
Total	100

**Table 5:** Distribution by Gender and PSS -10

Gender	PSS Score			Total	P value
	Low stress	Moderate stress	High stress		
Female	2(3.22)	49(79.03)	11(17.74)	62	0.108
Male	5(13.15)	24(63.15)	9(23.68)	38	
Total	7	73	20	100	

**Table 6:** Distribution by Religion and PSS - 10

Religion	PSS Score			Total	p value
	Low stress	Moderate stress	High stress		
Christian	3(5.17)	45(77.58)	10(17.24)	58	0.085
Hindu	2(6.06)	21(63.63)	10(30.30)	33	
Muslim	2(22.22)	7(77.77)	0	9	
Total	7	73	20	100	

**Table 7:** Mother's educational status and PSS-10

Mother's educational status	PSS TOTAL CODE			Total	P value
	Low stress	Moderate stress	High stress		
High school	1(33.33)	1	1	3	0.033
Pre degree	2(18.18)	8(72.72)	1(9.09)	11	
Degree	1(2.5)	35(87.5)	4(10)	40	
Post graduate	3(10)	20(66.66)	7(23.33)	30	
Professional	0	9(56.25)	7(43.75)	16	
Total	7	73	20	100	

**Table 8:** Schooling details and PSS-10

Schooling details	PSS Score			Total	P value		
	Low stress	Moderate stress	High stress				
Medium of schooling	English	6(6.38)	71(75.53)	17(18.08)	94	0.078	
	Malayalam	1(16.66)	2(33.33)	3(50)			6
	CBSE	2(2.81)	54(76.05)	15(21.12)			71
Syllabus	ICSE	0	5 (100)	0	5	0.031	
	State	5(20.83)	14(58.33)	5(20.83)			24
	Total	7	73	20			100

## DISCUSSION

Medical students are expected to learn and master a huge amount of knowledge, attitudes and skills for which they have to work hard which in turn put them under a lot of stress. In our study, out of 100 students studied 73% of the students experienced moderate stress and 20% experienced severe stress. The most important stressors among the students were vastness of academic curriculum (82%) followed by fear of failure of exams (81%). Female students were found to be more stressed than male students. In a similar study conducted in a Rural Medical College in Maharashtra by Somnath T Salgar *et al* , the most common stressors among first year medical students were high parental expectations(80.9%), vast syllabus(73%), worry about future(71.3%), long duration of course (67.3%), frequency of exams(66.7%), performance in formative and summative examination(66%), low self esteem(62.3%), lack of sleep(54%) and lack of emotional and social support(38%). Stress was found to be higher among females than males<sup>8</sup>. Another study conducted by Nethra Shakhthivel *et al* among first year medical under graduates in a South Indian medical college, 80% of the boys and 75% of the girls reported a moderate or higher stress level according to PSS<sup>9</sup>. The study conducted in Thoothukudi Medical college in Tamil Nadu by Dr. C. Selvarani, 72.6% under moderate stress and 8.6% under severe stress according to PSS score. Mean PSS for females was 19.55 (SD 5.14) while for males it was 17.98 (SD 6.36)<sup>10</sup>. Another study conducted by Selvi Thangaraj I Bangalore Medical College, out of 250 students studied 14.8% had low perceived stress, 68.4% had moderate stress, and 16.8% had high perceived stress. Mean perceived score was 20.29(SD = 6.24) and the mean perceived stress score of males 19.6 (SD=6.25) lower than females 21.18 (SD=6.25)<sup>11</sup>. Perceived stress increased with increasing educational status of mothers probably because mothers with higher education have high expectation from their children and they find it difficult to meet this expectation. Students who studied in CBSE Syllabus was found to have higher stress levels in our study.

## CONCLUSION

The study has shown predominantly moderate levels (73%) of perceived stress. Vast syllabus, fear of failure of exams and frequency and pattern of examinations are the common stressors among the students. Stress among girls was much higher than boys. In this study, association between mother's educational status and perceived stress and also association between syllabus and perceived stress were statistically significant. There is a positive correlation between PSS-10 and MSSQ.

## RECOMMENDATIONS

There are many stress factors once the students enters the medical field. It may not be possible to eliminate the stress in students but it can be reduced. Healthy student-teacher relationship would help the students to tackle the stress by making the lectures more interactive. Students were taught about the importance of self-motivation and advise the students to cultivate hobbies. Encourage the participation of students in extracurricular activities. Physical exercise for at least 30 minutes a day will make the students physically and mentally active. These can act as effective coping strategies. Further studies are required to assess the coping strategies among medical students.

## ACKNOWLEDGEMENT

We would like to express our deep gratitude to the principal who gave the permission for this study. We also thank Head of Department of Anatomy. We would like to offer our special thanks to all the first year medical students who took part in the study in spite of their busy schedule.

## REFERENCES

1. American Institute of Stress.
2. Oxford medical publications (1985). Concise medical dictionary, 2nd edition oxford, oxford university press.
3. Niaura R, Herbert PN, Saritelli AL, *et al*, Lipid and lipoprotein responses to episodic occupational and academic stress. Arch Intern Med 1991, 151(11), 2172-79.
4. Troyer D, Ullrich IH, Yeater RA, Hopewell R . Physical activity and condition, dietary habits, serum lipids in second year medical students. J Am coll Nutr 1990, (4), 303-07 .
5. Abdulghani HM, Alkanhl AA, Mahmoud ES, Ponnampuruma GG, Alfaris EA (2011) stress and its effects on medical students: A cross-sectional study at the college of medicine in Saudi Arabia. J Health Popul Nutr 29(5):516. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3225114/pdf/jhpn00029-0516.pdf>.
6. Liaison Committee on Medical Education (LCME) (2003) Functions and structure of a medical school: standards for accreditation of medical education programs leading to the M.D. degree. <http://www.lcme.org/publications/functions.pdf>
7. Association of American Medical Colleges (AAMC) (1998) Report 1. Learning objectives for medical student education: guidelines for medical schools. Medical school objectives project. <http://webcambus.drexelmed.edu/proffessionalism/AAMCMedicalSchoolObjectivesProject.pdf>.
8. Stress in first year medical students by Somnath T. Salgar *et al*.
9. Level of perceived stress and coping strategies prevailing among first year medical undergraduate students: A cross-sectional study from South India by Nethra Shakhthivel *et al*.
10. Prevalence of stress among first year undergraduate medical students by Dr. C. Selvarani *et al*.
11. Prevalence of stress levels among first year medical undergraduate students by Selvi Thangaraj *et al*.

Source of Support: None Declared  
Conflict of Interest: None Declared