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

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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

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INTRODUCTION

Stress is defined as the physical, mental, or emotional and financial strain or tension.¹ Medicine is an emotionally demanding training and therefore a career in medical education can sometimes be stressful².Stress may be due to exhausting working hours, striving for earning high grades, peer pressure etc³. 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 etc⁴.Stress experienced by the medical students start from the beginning of the training process⁵.Worldwide, medical colleges are responsible for making sure that the medical students have the adequate knowledge and skill before taking professional responsibilities⁶. 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 health⁷. 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.

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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 pretested 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 they 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.

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

Table 1: Distribution of the students by age

10	9	
19	31	
20	43	
21	14	
22	3	
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Mean age wa	as found t	o be 19.71	(SD=0.924).
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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			

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Sources of stress Vest No 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 Adjusting with roommates and heighbours 18 82 Iow stress Moderate stress (score 55-81) 3 Severe stress(score 282) 97 100 Table 5: Distribution by MSSQ score Total P value Low stress Moderate stress 100 100 Table 5: Distribution by Religion and PSS-10 <td< th=""><th></th><th colspan="5">Table 3: Distribution by PSS-10</th><th></th><th></th></td<>		Table 3: Distribution by PSS-10										
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Table 3: Distribution by PSS-10

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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%), summative performance formative and in examination(66%), low self esteem(62.3%), lack of and lack of emotional and sleep(54%) social support(38%). Stress was found to be higher among females than males⁸. Another study conducted by Nethra Shakthivel 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 PSS⁹. 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)¹⁰. 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)¹¹. 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 studentteacher 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.

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