PREVALENCE OF STRESS AND ITS ASSOCIATED FACTORS

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ABSTRACT: Stress among medical undergraduates is of growing concern. However such studies are lacking in the Medical Colleges in Kerala. This study aims to determine the prevalence of stress among first year medical students and to explore the sources of stress in these students. In this cross sectional study, 100 first year students were asked to complete the questionnaires of Medical student's Stressor Questionnaire (MSSQ), Cohen's Perceived Stress Scaled (PSS-10) and General Health Questionnaire (GHQ -12). 96 of 100 completed the questionnaires with response rate of 96%. All data were held securely and confidentially. Data analysis was done using SPSS version 19. The prevalence of stress as per MSSQ was 93.75%, PSS was 69.79% and GHQ was 65.62%. The study reports very high prevalence of stress among first year MBBS students. It also revealed that academic related problems were the main source of stress. A more detailed investigation of these factors in other Medical colleges of Kerala is highly essential. This study also provides scope of adopting strategies for revising curriculum to reduce academic stress and also for organizing programs in Institutions to reduce student's stress.

KEY WORDS: Undergraduate Medical Students, Stress, Stress factors, Prevalence, Academic performance.

INTRODUCTION: Stress and its psychological manifestations are inherent in human life and are a major source of concern in modern day society[(1)]. Psychological stress has long been regarded as having influence on learning and performance. Stressors may be real or imagined: internal or external. Two conditions are necessary for a potential stressor to become an actual stressor: there must be uncertainty over the impact and the out come must be important to that individual[(2)]. Stress has been measured in three aspects: Stressors, stress response and individual characteristics like personal resources, behavior pattern and coping styles. These aspects of stress measures are important in planning treatment and evaluating the effects of treatments [(3)].

There has been an increased concern regarding stresses involved in Medical Education. Medical undergraduate training is extensive and emotionally exhausting. The first year in Medical college poses many new challenging and potentially threatening situational demands for the incoming students, requiring major adjustments to novel and destructive experiences. Several studies have documented that medical students experience high incidence of psychological distress during different stages of their undergraduate course[(4, 5, 6)], the first year being the most stressful. The three main reasons for stress identified are: Academic stress, social issues with inter personal relationship problems and financial problems[(7)]. In addition to coping with stress of everyday life, medical students have to deal with stress specific to medical school life. Study of Sherina et al[(8)] and Saipanish[(9)] conducted in Malaysian and Thai medical schools have revealed that prevalence of stress among medical students was up to 41.9 % and 61.4% respectively.

Earlier studies have found strong association between stress and co morbid factors like anxiety and depression, interpersonal conflicts, lower academic and clinical performance[(10, 11, 12)].

Some studies also reported evidence of suicide and drug abuse[13, 14]. As medical students have to acquire vast amount of knowledge, they are compelled to make many personal and social sacrifices to attain good academic results which put them under great stress. All these factors in turn may lead to development of depression and anxiety.

The present study is intended to explore different levels of stress among the first year medical students of MES Medical College, Perinthalmanna, Kerala. The study examines different stressors and reactions to these stressors experienced by first year medical students. Very few studies have been conducted on these subjects in our setup. This indicates the importance of such studies. As health care professional it is our responsibility to know the prevalence of stress among medical students early in their training and to identify the relevant contributory factors. This might help us in devising specific health education programs which can be tailored according to their personal needs empowering them to deal with stress and its causes. Stress among the students was analysed using the questionnaires of Medical student's Stressor Questionnaire (MSSQ), Cohen's Perceived Stress Scaled (PSS-10) and General Health Questionnaire (GHQ -12).

OBJECTIVES:

1. To determine the prevalence of stress in first year medical students.
2. To explore the sources of stress in these students.

MATERIALS AND METHODS:

Study Design: Cross Sectional Survey

Study Population: Questionnaires were administered to all the 100 first year MBBS students of MES Medical College who consented to participate in this study. 96 students filled the questionnaires.

Study Tool: 100 first year MBBS students of MES Medical College. Three Questionnaires were given to each student.

Questionnaires used:

Medical student's Stressor Questionnaire (MSSQ)
Cohen's Perceived Stress Scaled (PSS-10)
General Health Questionnaire (GHQ -12)

Medical student's Stressor questionnaire (MSSQ) is a 27 item screening instrument developed for assessing the stressor experience of first year MBBS students.[2] Subject response was assessed using 5-point Likert scale. 5 – Strongly Agree, 4 – Agree, 3 – Neither Disagree nor agree, 2 – Disagree & 1 – Strongly Disagree. Higher the score, higher the stress. The MSSQ has significant correlation with Perceived Stress Scale (PSS) and General Health Questionnaire (GHQ) establishing Convergent Validity.

Perceived Stress Scale (PSS-10)[15] is the most widely used psychological instrument for measuring the perception of stress. It consisted of 10 items with scores 0-40, Higher the score, higher the stress. Questions in PSS deals with feelings and thoughts during the last one month.

The General Health Questionnaire (GHQ-12)[16] which consisted of 12 questions, scores in 0-0-1-1 format, was used as the screening instrument for emotional disorders.

Data Collection: 100 students of first year MBBS were invited to participate in the survey and all of them agreed to fill up questionnaires for the study. Students were given a briefing about the

objectives of the study. The participants were assured confidentiality of the information collected. The anonymous questionnaires were distributed and two hours were allotted to answer the questionnaires and the researchers collected the completed questionnaires. 96 students filled up all the three questionnaires completely in the stipulated time.

Data Analysis: The data was analyzed using Statistical Package for Social Sciences (SPSS) version 19 for Windows. The number and percentage of stressed cases were calculated according to demographic variables. Percentage frequency of occurrence was calculated for each of the stressors from Medical Student's Stressor Questionnaire (MSSQ). Chi square test was applied and p value was obtained to find the significance of difference of stress levels between males and females.

OBSERVATION AND RESULTS: Out of the 100 students, 96 students participated and completed the questionnaires in the given stipulated time, with a response rate of 96%. 62 students were females (64.58%) and 34 were males (35.42%). The most common stressor identified in our study was difficulty in covering portions daily and the last being fear of ragging.

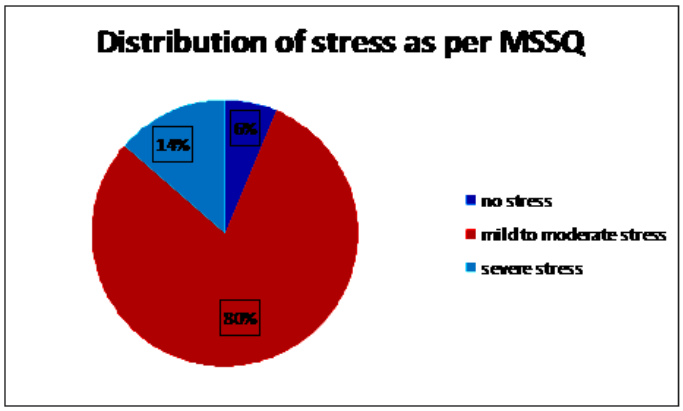
The information regarding the sources of stress as per MSSQ are summarized in the following table:

NO:	STRESSORS	% OF STUDENT'S WHO HAD STRESS
1	Difficulty in covering portions daily	92.71
2	Less time for repeated learning	91.67
3	Increased workload towards exams	88.54
4	Required to be more responsible	84.83
5	Lack of time for drawing and writing records after completing daily studies	79.17
6	Vast syllabus	78.13
7	Procrastination (habit of postponing routine work)	75.00
8	Tired feeling after the right schedule from 9am to 5pm	93.96
9	Covering topics very fast	72.92
10	More self study needed	71.88
11	Lack of time management skills	71.88
12	Problems in memorizing topics	68.75
13	Overlapping of short examinations and seminars by different departments	66.67
14	First year portions being covered within 9-10 months	63.54
15	Difficult to follow Cunningham's manual	62.5
16	Tough topics	61.46
17	Students are supposed to be ready with all the topics & anyone can be asked to present the topic for seminar	60.42
18	Fear of 'Late' mark during record correction	57.29
19	Not allowing other textbooks except Cunningham's	55.21

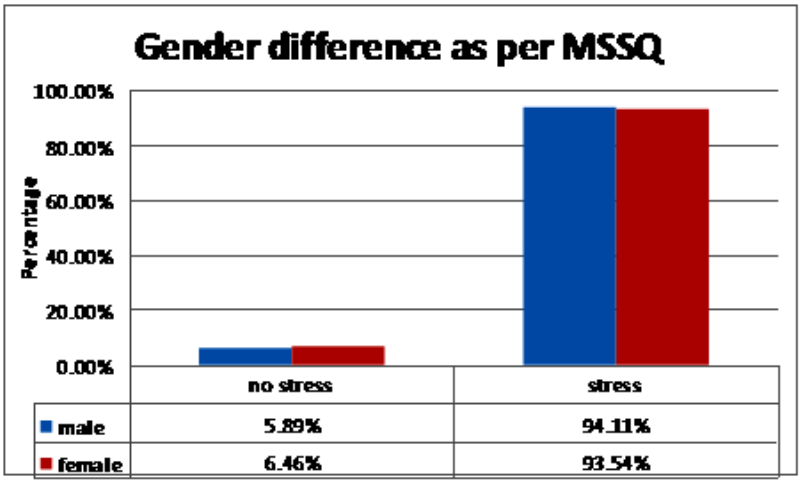
	manual inside the dissection hall	
20	Fear of becoming additional or batch out or repeater	53.13
21	Failure in first sessional examination	51.04
22	Even after trying the best, not getting expected marks	46.88
23	Continuous three hours dissection without break	44.79
24	Dissection table teaching is inadequate	34.38
25	Not being given proper idea about how to do	27.08
26	Not being given appropriate marks in sessional examination	18.75
27	Fear of ragging or harassment	8.33

Table -1

As per MSSQ, 90 students (93.75%) have stress. Out of these 13 students (13.54%) have severe stress and 77 students (80.20%) have mild to moderate stress. 6 students (6.25%) have no stress. Among the 62 females, 93.54% have stress and among the 34 males 94.11% have stress.



Graph: 1



Graph: 2

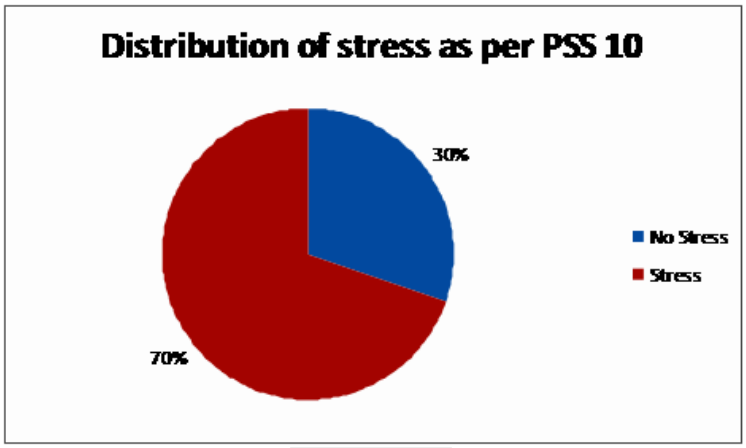
MSSQ - Among the 62 females, 58 (93.54%) have stress and among the 34 males 32 (94.11%) have stress.

MSSQ STRESS	FEMALE	MALES	TOTAL
YES	58	32	90
NO	4	2	6
TOTAL	62	34	96

Table - 2

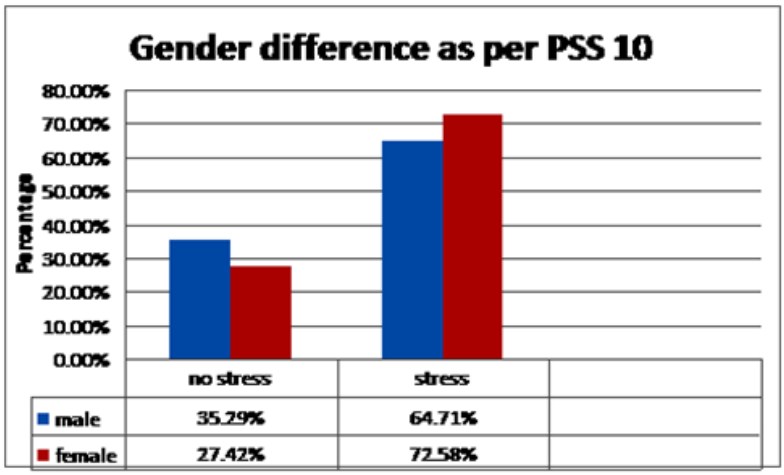
Chi square with Yates correction -- 0.109298. p value > 0.05 (no significance)

As per PSS 10 - 29 students (30.21%) have no stress and 67 students (69.79%) have stress.



Graph: 3

PSS10 - 62 females, 45 (72.58%) have stress & 34 males, 22 (64.71%) have stress.



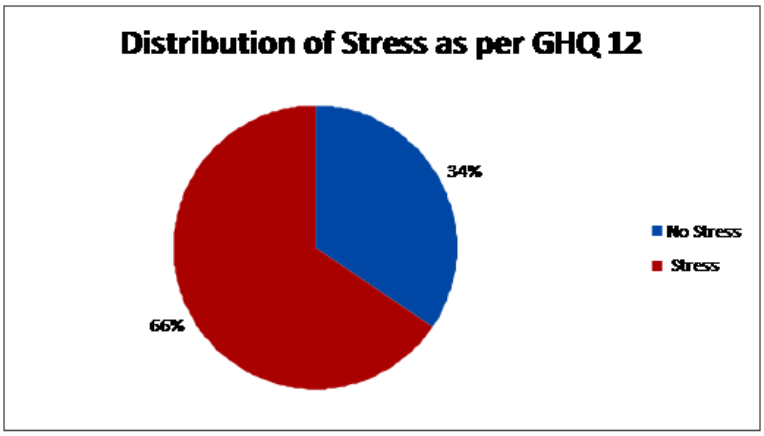
Graph: 4

PSS STRESS	MALE	FEMALE	TOTAL
YES	22	45	67
NO	12	17	29
TOTAL	34	62	96

Table -3

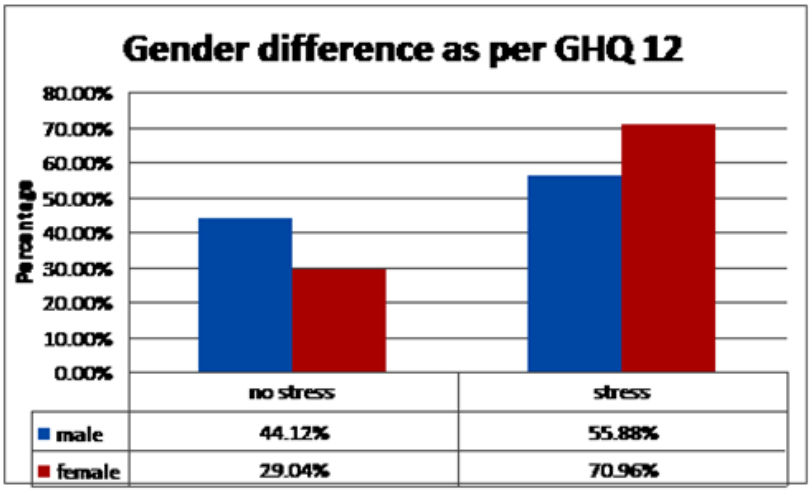
Chi square – 0.6458. p value > 0.05 (no significance)

As per GHQ 12 - 33 students (34.38%) have no stress and 63 students (65.62%) have stress.



Graph: 5

GHQ12 **-** 62 females, 44 (70.96%) have stress & 34 males, 19 (55.88%) have stress.



Graph: 6

GHQ STRESS	MALE	FEMALE	TOTAL
YES	19	44	63
NO	15	18	33
TOTAL	34	62	96

Table - 4

Chi square – 2.2151. p value > 0.05 (no significance)

DISCUSSION: In our study we evaluated the overall prevalence of stress and the factors producing stress among first year MBBS students. Many previous studies prove that there is a high level of stress among medical undergraduates.[2, 4, 8, 9, 17, 18, 19] Studies have also suggested that the prevalence of stress is more among the first year students.[5, 6, 20] Majority of the first year medical undergraduates are living away from home for the first time. This is an initial phase of transition from a very well supported and pampered circumstance to a more independent and less supported circumstance.

The response rate of 96% renders an adequate sample for this study. The survey was carried out during the middle of the year to avoid the extreme or more than usual stress experienced by students during admission to new Institution and also during the University examinations at the end of the year. This study shows that there is a considerable amount of stress among the first year medical students. The results as per MSSQ shows that, 13.54% have severe stress, 80.2% have mild to moderate stress and 6.25% have no stress. This is comparable to the study conducted in the two Government colleges of Kerala where the results were as follows: 11.3% had severe stress, 80% had mild to moderate stress and 8.7% had no stress[2].

The study reveals that the most severe stressors were:

- Inability to cover their daily portions (92.71%)
- Lack of time for revision (91.67%)
- Increased workload towards examinations (88.54%)
- Burden of responsibility (84.38%)
- Lack of time for drawing and writing records after completing daily studies (79.17%)
- Vast syllabus (78.13%)
- Procrastination (75%)

Previous studies have also shown that academic problems were the main source of stress[2, 17, 18, 20]. In our Institution first year students have academic hours from 8AM to 4PM with one hour lunch break, 6 days per week. Many of the Government holidays are workings days. So recreation time is reduced. They have to undergo repeated formative and summative assessment in all the three basic subjects. The frequency of short examinations and seminars conducted are also more compared to Government Medical colleges. So the time for preparation for examinations is reduced. The examinations and lack of time for preparation for examination have been found to be the major factors of stress among these students.

This study is not consistent with previous researches, assessed by GHQ and PSS questionnaires, in which a significant difference of general stress, between males and females have been identified[21]. There is no significant difference of general stress between males and females. As per MSSQ also the stress level between males and females is almost equal. This proves that there is no gender variation in the amount of stress produced due to factors pertaining to medical curriculum, which is similar to a study reported from medical students in United Kingdom and Qazvin University[19, 22].

As per WHO, a stressor is any stimulus which evokes a stress response. A great academic stress may lead to development of depression and anxiety. WHO estimated in 1990 that depression was one of the main cause of "Years lived with disability" in developed countries and that it will be

the major cause of illness, especially in women and also in developing countries. Studies have proved that depressive disorders are seen to begin usually between 20-40 years[23]. Medical students feel very anxious when they face the reality, especially in the first year where there is a drastic change from school environment to a professional college environment. Stress can lead to anxiety and depression which can promote habits like alcoholism and drug usage. This in turn can be related to poor academic performance and even lead to suicide. Therefore there is a great need of Institutional support and psychological support for students to tide over the stress they experience. The main aim of this study is to identify the stress factors among first year MBBS students and to help them understand what is expected from them and also help them cope with the new circumstances.

Majority of stressors noted in this study are inevitable part of medical curriculum of every Medical college. Our Institution provides a mentorship program for students where two faculties, one male and female are allotted per 10 students. A particular day and time have been fixed every month, to meet their mentors. Both academic and nonacademic problems of the students are addressed by the mentors who help them by giving mental support and advices to overcome stress. Even then a great amount of stress has been identified among the first year MBBS students as per our study. 13.54% of students were identified to have severe stress.

Other support systems like counseling and preventive mental health services, stress management programs and training workshops would help such students. Suggestions are made for other recreational facilities to be provided for the students by the college. The study has also revealed that the areas of concern are the information over load, frequency of examinations and lack of time for relaxation due excessive working hours. This demands attention towards curriculum change process in medical education, especially in first year MBBS, where the three basic science subjects are taught within a period of 9-10 months.

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