Psychosocial perspective of first year medical students entered in a professional course – a cross sectional study from Davangere, Karnataka.

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Abstract

Background

The perception of stress is frequently influenced by socio cultural factors; the results of studies on one region cannot be generalized to the other. This study is an attempt to explore the perception of stress and allied stressors among Indian medical students who have just entered into professional course.

Methods

A cross-sectional study was done on medical students of SSIMSRC, Davangere, Karnataka. Depression, anxiety and stress scores were noted using DASS questionnaire and sleep quality assessed using PIRS questionnaire. Attributable factors for negative emotional state in students were also noted. Pearson's correlation used to note correlation between the negative emotional states scores and sleep parameters score.

Results

Mean depression, anxiety and stress scores were 8.88 ± 7.31, 8.29 ± 6.41 and 10.46 ± 6.67 respectively. Significant positive correlation between these scores and sleep parameters score was observed. Common attributable factors for negative emotional states were greater academic demands (36%), being in one's own environment with new responsibilities (35%), being away from home(31%), exposure to new people, ideas and time (27%), facing new and difficult college work (47%), missing family or friends, feeling alone or isolated, experiencing conflict in relationships (34%),worrying about finances (13%). change in food habit (35%), change in living arrangements (26%), personality factors (30%).

Conclusion

Negative emotional states affect sleep quality and play a contributory factor for stressed situation, so early intervention of these states are required for the improvement of mental health and academic career.

Key words

Anxiety, depression, psychosocial perspective, stress.

Background

In an era where admission to professional courses is largely on the basis of merit and intense competition, many students may have to settle for educational programme like medical, engineering, law, management that is valued high in the society. Indian children have high regards for their parents and hence heed their advice and enroll in professional courses to fulfill the dreams of their parents and well wishers. Majority of students are forced to pursue a career that is not their choice. The professional educational programme is highly stressful. Stress, quality of life and sleep are all interrelated aspects each impinging on the other. Previous study showed medical students have higher level of stress that was attributable to change in living environment, homesickness, medical syllabus, amount of work to perform, board examinations [1].

Getting into the medical school is a matter of pride in India, but the challenges faced by students of being in medical school are overlooked. MBBS course is the toughest course among all professional courses including Engineering, Economics, BCA or other technical courses [2]. A study by Supe AN showed that there is a greater prevalence of stress in first phase of MBBS course. However there was no single common factor accountable for stress. Individual variations in stress highlight the fact that it is due to medical training and personality traits [3]. Medical students experience stress because of academic demands, perfectionism and demanding nature of medical practice. They exhaust physically and get drained out emotionally [4]. The present Indian medical curriculum is in such a way that huge content is delivered in a short period and the students have to face exams frequently at intervals [5]. Apart from the academic stress the students are exposed to many other stressors like worries about their future, financial issues [6]. Over all these issues living away from home and developing new relationships add to stress. Stress hampers the health of the individual which over a period of time decrease their scholastic performance, decision making and judgment. Thus coping strategies to de-stress, determines how successful a medico can be in future [7].

Since the perception of stress is frequently influenced by socio cultural factors, the results of studies on one region cannot be generalized to the other. This study is an attempt to explore the perception of stress and allied stressor among Indian medical students who have just entered into professional life.

Material and Methods

Study Period

The present study was done first quarter of first MBBS for the academic year 2013-2014.

Study design and the participants

The study was carried out on I MBBS students at Shamnur Shivashankarappa Institute of Medical Sciences and Research Centre (SSIMSRC), Davangere, which is a private medical college affiliated to Rajiv Gandhi University of Health Sciences, Bangalore, Karnataka. Students were aged between 17and 20yrs.

Response Rate

Out of 150 students, 133 participated in the study giving an overall response rate of 88.66%.

Data collection

The purpose of the study was communicated well in advance to the students and their participation in research was voluntary.

All the participants assembled in the lecture hall and the instructions were given in mass by a single observer. They were instructed to fill the questionnaire independently and asked to not spend more than a minute for each question. Confidentiality was also maintained while marking the questionnaires. The markings were based on their experience over the past week. After completion, they were then asked to select options from the common template given to the participants who had a list of various psychosocial factors leading to depression, anxiety, stress whichever was best applicable to them.

Questionnaire and validity

Negative emotional state was assessed using Depression Anxiety Stress Scale (DASS) and sleep was assessed using Pittsburgh Insomnia Rating Scale (PIRS) [8, 9]. The reliability scores of the depression, anxiety and stress scales in terms of Cronbach's alpha scores are 0.91, 0.84 and 0.90 in the normative sample [8]. Depression questions are formulated to assess feeling of devaluation of life, hopelessness, lack of involvement and interest, anhedonia, dysphasia. Anxiety scale checks for autonomic functions, skeletal muscle effects like tremors, shakiness of legs and subjective experience of anxiety etc.

Stress scale assessed irritability, easily being agitated, over reactiveness, impatience, nervous arousal and non specific arousal, over a four point severity scale which ranges from not bothering, bothering to mild extent, to moderate extent and extremely severe form. The subjects were asked to state the extent to which they experienced each of the questions over the last one week. The final scores of depression, anxiety and stress were calculated by summing up the scores for questions on D, A and S. To randomize the assessment questions were jumbled up and were not arranged in a

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sequence for each component. This was then evaluated as per the severity rating scale given by the manual.

DASS is a 42 item questionnaire includes three self report scales designed to measure negative emotional states of depression, anxiety and stress. Each of these scales contains 14 items.

The depression scale assesses dysphasia, hopelessness, devaluation of life, self deprecation, lack of interest or involvement, anhedonia and inertia. Anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety and subjective experience of anxious effect. Stress scale is sensitive to levels of chronic non specific arousal, assesses difficulty relaxing, nervous arousal and being easily upset/agitated, irritable/over reactive and impatient. Respondents were asked to use four point severity/ frequency scales to rate the extent to which they have experienced each state over the past week. Scores of D, A, and S was calculated by summing the scores for relevant items. The scores for each of the respondents over each of the subscale were then evaluated as per severity rating given by manual.

PIRS contains 65 questions which assess distress, sleep parameters and quality of life. The respondents were asked to use four point severity/ frequency scales to rate the extent to which they have experienced each state over the past week. Scores for the above parameters was calculated by summing the scores for relevant items.

The reliability score of PIRS in terms of global test-retest correlation is 0.90 and its correlations with the Pittsburgh Sleep Quality Index (PSQI) and the Speilman Insomnia Symptom Questionnaire(SISQ) are 0.73 and 0.71 respectively [9].

A common template containing attributable psychosocial factors of anxiety, stress and depression was given and the students were asked to mark one or more factors which ever was applicable to them. The template contained proven psychosocial factors like academic demands, financial needs, new living environment, social habits, psychological makeup, physical health problems, personality factors etc.[10-12]. Students were also emphasized to mention reasons other than those in the template, if they were any.

Inclusion criteria
Apparently healthy I MBBS medical students, batch 2013-14, who have given informed written consent, were considered for the study.

Exclusion criteria
Students under medication, out of station during the study period, incompletely filled questionnaire, lack of interest and not willing to give written informed consent were set up as exclusion criteria to avoid bias.

Sample size calculation
Sample size estimation= (Z-score)² * p*(1-p) / (margin of error)²

For confidence interval -95% Z-score is 1.96, with margin of error – 11% and p-73% (prevalence of stress among medical students[3])

Sample size = $(1.96)^2$ x 73 x $(100-73)/8.03^2$

= 117.42

Ethical committee approval
Institutional ethical approval was taken, prior to the study. Informed written consent was obtained from the participants.

Data management and statistical analysis
Statistical analysis was carried out using SPSS trial version 16.0. Mean and standard deviation were calculated for all the parameters and correlation between different parameters was assessed.

Results

The study included 133 subjects out of which 71 were males and 62 were females. Mean questionnaire scores for DASS and PIRS are shown in Table 1.

Table – 1 Mean scores of different factors (N= 133)	
Factors	**Mean±SD**
Depression	8.88±7.31
Anxiety	8.29±6.41
Stress	10.46±6.67
Distress	37.89±21.43
Sleep parameters	7.2±4.44
Quality of life	11.8±5.2
Total score	56.89±27.83

Table 2 explains grades of different emotional parameters. Out of 133 assessed 78, 72 and 92 of them were in the normal range for depression, anxiety and stress respectively. Rest of them had different grades of the above mentioned factors.

Table – 2 Grades of different emotional parameters in the participants (N = 133)			
	Depression	**Anxiety**	**Stress**
Normal	78	72	98
Mild	25	15	21
Moderate	21	22	13
Severe	6	14	0
Extremely severe	3	10	1

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Table 3 shows coefficient of correlation between different emotional parameters (depression, anxiety and stress) and subscales of PIRS (distress score, sleep score, and quality of life score). There was a significant positive correlation between each of the emotional parameter with that of subscales of PIRS.

Table – 3 Coefficient of correlation (Pearson's) between different emotional parameters and subscales of PIRS			
Subscales of PIRS	Depression	Anxiety	Stress
Distress score	0.607	0.661	0.703
Sleep score	0.373	0.461	0.512
Quality of life score	0.509	0.465	0.509
Total score	0.622	0.669	0.718

All the correlation values are significant at the 0.01 level (2-tailed)

Table 4 shows reasons attributable to depression, anxiety or stress as filled by participants (n=133).

The common reasons for anxiety were greater academic demands (36%), being in one's own environment with new responsibilities (35%), being away from home (31%), exposure to new people, ideas and time (27%). The reasons quoted for depression were facing new and difficult college work (47%), missing family or friends, feeling alone or isolated, experiencing conflict in relationships (34%), living away from family for the first time (31%), worrying about finances (13%). The reasons for anxiety were change in food habit (35%), change in living arrangements (26%), personality factors like easily flustered (30%), want to control everything (16%), lack of self-esteem (14%), perfectionism (11%).

Discussion

Stress factors and medical students
Students are faced with challenging facets of their lives such as exams, work, family and financial responsibilities. Previous studies concluded that students reported reduced attention, poor concentration and impaired decision as reasons for stress [13]. Among the medical students sources of stress are academic pressure, social issue and financial problem [14].

Our study also reveals negative emotional states like depression, anxiety and stress experience by newly admitted medical students. The mean stress score was higher when compared with anxiety and depression. The mean distress score was high which shows that the sleep quality was affected.

Out of 133 students depression was noted among 55 students, anxiety among 61 students and stress among 35 students. The prevalence of these negative emotional states seems to be considerably higher and comparable with general population. Stress noted in medical curricula is due to medical training per se rather than personal problem.

Table – 4 Reasons attributable to depression, anxiety or stress as filled by participants.	
Attributable psychosocial factors	No. of students (%)(n=133)
Stress	
Greater academic demands	48 (36.09%)
Being on one's own in a new environment – with new responsibilities	47 (35.34%)
Changes in family relations and one's social life	15 (11.28%)
Financial responsibilities	14(10.53%)
Exposure to new people, ideas, and temptations	37(27.82%)
Being away from home, often for the first time	42(31.58%)
Making decisions, on a higher level than one is used to	23(17.29%)
Awareness of one's sexual identity and orientation	2(1.50%)
Preparing for life after graduation	13(9.77%)
Psychological make-up low self-esteem, pessimism	6(4.51%)
Depression	
Living away from family for the first time	41(30.83%)
Missing family or friends, feeling alone or isolated, experiencing conflict in relationships	46(34.59%)
Facing new and sometimes difficult school(college)work	63(47.37%)
Worrying about finances.	17(12.78%)
Loss of member of family / illness of parents	5(3.76%)
Anxiety	
I. Family history of mental health problems	0(0%)
II. Ongoing stressful events	
Job stress or job change (as a medical student)	14(10.53%)
Change in living arrangements	35(26.32%)
Change in food habit	47(35.34%)
Family and relationship problems	5(3.76%)
Major emotional shock following a stressful or traumatic event	6(4.51%)
Death or loss of a loved one	6(4.51%)
III. Physical health problems (hormonal problem, asthma etc)	21(15.79%)
IV. Personality factors	
Perfectionism	15(11.28%)
Easily flustered (become nervous or confused)	40(30.08%)
Lack self-esteem	19(14.29%)
Want to control everything	22(16.54%)

Workload, perceived personal competence are more pronounced in the first phase of medical curriculum [15]. A research conducted by Mohsin S showed gender difference in perceived stress with female medical students having significant higher stress score than male medical students [16]. A study carried out in Seth G S Medical College by Supe AN, showed stress to be commoner and is process oriented among medical students. Academic factors are higher

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perceived cause of stress [3]. In First MBBS emotional factors are significantly present. Shah C et al conducted a study on stressors and coping of stress by medical students and concluded that there is greater amount of stress among medical students which makes them process oriented [17]. Cherkil S et al studied the presence of stress among medical students and various coping styles adopted by the students to overcome stress. They noted positive correlation between different coping styles and various stressors prevalent among medical students [18].

In this study around 36% of the participants quoted greater academic demands as major factor responsible for stress. 47% of them referred to facing new and different college work as major factor for depression. Change in food habit was the major factor responsible for anxiety amounting to 35% and so on.

Sleep disturbances as a stress predictor

Insomnia is one of the diagnostic criteria for many psychiatric disorders. Those with depression, anxiety, substance use or dependence at baseline have symptoms of insomnia; vice versa is also true [19]. Alterations in the sleep wakefulness cycle leads to increased risk of depression, poor memory, lack of concentration, reduced work performance, unsatisfactory academic progress and living conditions [20]. These symptoms have negative influence on daily hassles and quality of life. Our study reveals significant influence of negative emotions on the sleep quality (Pearson's correlation). Medical UG training is extensive and emotionally exhausting. The undergraduate phase is a very sensitive period in a medico's life span. It is this phase of life when an individual moulds oneself; personify their personality, sets up goals and ambitions in life. Thus the handling of stress in this period highlights the need for developing new system and interventional strategies for reducing mental health problems [21].

This study supports many of the findings of previous researchers; in that majority of the medical students experience some level of anxiety, stress and depression that leads to sleep disturbance which is highest in initial few days of their medical curriculum. Hence early medical interventions to reduce the levels of negative emotional states can help students to overcome these problems and help them progress well in the academics.

Stress has a very high cost to the life of the individual as well as the society. Psychosocial interventions are one among the most effective methods for improving sleep quality in general population [22]. Similar intervention can be tried among students so as to improve sleep quality.

Conclusion

Medical training right from undergraduate school and internship to work as a professional involves lot of compromises on physical and emotional life which over a long run might decrease the wellbeing of an individual.

In this study significant influence of medical curriculum on the psychology of the medical students and altered sleep patterns were observed. As a health care professional it is our responsibility to know the prevalence of stress and relevant contributing factors among medical students. Identifying susceptible students who are at risk for academic failure early in the course of the training can help in devising specific health programs and tailoring according to their personal needs. Implementing natural ways like yoga, meditation, relaxation techniques, counseling, and conducting stress management workshops may empower medicos to combat with stressed situations.

Limitations and future scope of the study

The study population was less to generalize the results, because we considered only one medical college. Similar research works are required over larger Indian student population which would help in modifying the medical curriculum to overcome the psychosocial aspects experienced by the students in a newer environment.

Correlating these subjective results with objective assessment of stress by estimating serum cortisol and absolute eosinophil count will authenticate the results.

Abbreviations

Depression Anxiety Stress Scale (DASS), Pittsburgh Insomnia Rating Scale (PIRS), Pittsburgh Sleep Quality Index (PSQI), Speilman Insomnia Symptom Questionnaire (SISQ).

Competing interests

The authors declare that they have no competing interests.

Authors' contribution

PBK and SA distributed the questionnaire, interpreted the data, drafted the manuscript, and revised it. The final manuscript was approved by all authors.

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