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Original Research

Evaluation of general health condition, stress and depression among first year medical students

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ABSTRACT

Stress appears to be universally prevalent entity in all students, regardless of their age sex, education, parent's occupation, and presence or absence of a role model. Medical education is long and emotional taxing. Medical students thus experience tremendous stress during their undergraduate study. Hence the objective of this study was to evaluate general health condition and depression among first year MBBS students and also to determine the correlation between general health condition and depression. This study was a cross sectional and single centered study included 149 students of first year MBBS. In this study general health was assessed by using Goldberg's general health questionnaire, depression was measured by Center for epidemiologic studies depression scale, student stress was measured by student stress survey questionnaire. Statistical analysis indicated the general health condition of students from urban background was significantly better than that of students from rural ($P<0.05$). The depression score among girls was significantly higher as compared to boys, 14.7% of the students were highly stressed and 79% had mild to moderate stress. Thus coping strategies can be adapted based on the quality and quantity of stress in medical students, which will help in preventing stress related disorders. Stress management increases motivation in students and better results in academic activities.

INTRODUCTION

In today's ultra-competitive environment, students face more stress than ever – be it related to studies examination, peer, teachers or parent's pressure. Following Medical Council of India guidelines, medical colleges in India have adopted a pattern of one year of basic sciences, one and half years of para-clinical sciences and two years devoted entirely to clinical subjects [1]. The medical colleges in India have traditionally followed a curriculum stuffed with a large body of knowledge pertaining to basic sciences and clinical disciplines.

Medical education is perceived as being stressful, asit is characterized by many psychological changes in students. High level of stress may have a negative effect on cognitive functioning and learning of students in a medical college [2]. Stress among medical students is likely to predict later mental health problem but students seldom seek help for their problems [3]. Various factors contribute to academic stress in medical students. Previous studies have suggested that stress-related factors may be interlinked, forming an intricate psychological structure that may precipitate and perpetuate academic stress.

Academic stressors include excessive homework, unclear assignments [4,5], lack of time management skills, uncomfortable classrooms, weekly tests and assignments, the pressure to earn good grades, and receiving a lower grade than expected [5]. Non-academic stressors include social issues and financial

problems [4]. The most common stressors among medical students were high parental expectations, frequency of examinations, vastness of academic curriculum, sleeping difficulties, performance in periodic examinations, and worries of the future [6].

Long-term exposure to stress can lead to serious health problems. It can predispose to hypertension, diabetes mellitus, obesity, skin disorders, impairment of immune system, infertility, anxiety, depression, digestive problems, etc. Body response to stress varies according to individual predisposition [7]. Studies have reported an association of excessive stress level with lowered medical student's self-esteem [8], anxiety and depression [9], difficulties in solving interpersonal conflicts [10], sleeping disorders [11], increased alcohol and drug consumption [12], cynicism, decreased attention, reduced concentration and academic dishonesty [13], it is also associated with inhibition of student's academic achievement and personal growth development, As a result, medical students may feel inadequate and unsatisfied with their career as a medical practitioner in the future [14]. A greater understanding of the factors underlying academic stress may lead to improved stress management strategies. Hence the present study was carried out to determine the general health condition, the factors associated with stress among the students and also to determine the correlation between general health condition and depression among first year medical students.

MATERIAL AND METHODS

In this cross sectional study, 149 first year medical students were enrolled; these were first batch of students of our medical institution, which was in the infancy stage. The age of the students was ranging from 18 to 20 years. The students were first asked to read and sign a consent form. For reliability, anonymity and confidentiality were maintained; the students were asked not to write their names. All students who participated in the study were informed about the objectives of the study. Approval for conducting the study was obtained from the institutional ethical committee.

The study was carried out by obtaining sociodemographic details from the students. The general health was assessed by using Goldberg's general health questionnaire. CES-D: Centre for Epidemiologic Scale for depression was used to measure the depression among them. The stress levels were measured by using student stress survey questions. All the participants were tested under the same basic conditions. They were asked to complete the survey in a classroom that they were familiar with.

Statistical analysis

The data obtained was analyzed by using the Statistical Package for the Social Sciences (SPSS) version 17.0

RESULTS

A total of 149 students participated in the study among 150 students of first year medical students of Batch 2011-2012. Around 44% of them were boys and 20% of the students were from rural background, 75% of them had scored above 70% in their 12^{th} examination, 14.7% of the students felt that they were highly stressed and 79% of them reported of mild to moderate stress. The main reason of stress in 62% of students was academic performance followed by 30% of them attributing it to transportation facility provided for the students. There was a change in sleeping and eating habits among 74% and 87% of the students respectively, 74% of the students felt that there was an excessive class work load.

The reliability of general health and depression questionnaire scales consisting of 12 and 20 questions respectively was estimated. Reliability α for general health questionnaire was 0.5348 and that by Gutman'sSplitoff method was 0.6039 which was considered to be good. There was excellent reliability for depression scale with α of 0.7847 and by Gutman'sSplitoff method 0.7931.

It was found that 10.06% of the students had poor general health where as 69.12% of them had mild to moderate depression. There was no significant difference in the general health condition between girls and boys. However there was a significant greater depression among girls as compared to boys (Table 1).

There was a significant difference in general health condition between rural and urban students with urban being better. However there was no significant difference in depression among them (Table 2).

There was a significant positive correlation between general health and depression with co-relation coefficient $r = + 0.355$ at $p<0.01$. Linear regression coefficient was estimated to be 11.880 and was statistically significant.

Table 1. General health information of the students

Particulars	Boys (%)	Girls (%)	Total (%)
Students	65(43.62)	84(56.38)	149(100)
Urban	56	63	119(79.86)
Rural	9	21	30(20.14)
General Health			
Poor	10	5	15(10.06)
Fair	24	39	63(42.28)
Good	31	40	71(47.66)
Depression			
Absent	28	17	45(30.20)
Mild to moderate	37	66	103(69.12)

Table 2. General health score and Depression score

Particulars	Number	Mean	SD	't' Value	'P' Value
General health Score					
Males	65	28.83	7.53	1.888	>0.05
FemalesF	84	31.02	6.62		
Depression score					
Males	65	23.15	8.651	2.234	<0.05
Females	84	26.46	8.585		
General health Score					
Rural	30	26.86	6.43	2.83	<0.01
Urban	119	30.87	7.04		
Depression score					
Rural	30	22.53	8.79	1.752	>0.05
Urban	119	25.64	8.65		

DISCUSSION

The aim of medical education is to produce healthy and competent doctors to serve the society. Medical students are particularly vulnerable at transitional periods such as their first year of medical school, when they face a period of adjustment to the new environment of medical training [15]. Medical education is perceived as being stressful. Stress appears to be universally prevalent entity in all students, regardless of their age, sex, education, parent's occupation, and presence or absence of role model [16]. A high prevalence of stress among medical students is a cause of concern as it may impair behavior of students, diminish learning, and ultimately affect future patient care.

Several studies have revealed high rates of psychological morbidity in medical students at various stages of their training [17]. There are also a number of health related factors that can contribute to a student's academic performance. The amount of exercise, diet and also the amount of social support the student perceives, all can contribute to, how a student academically performs [13]. In this study, the main reason of stress was academic performance, transportation facility for students, change in sleeping & eating habits and excessive class work load. The same stressors may be perceived differently by different medical student, depending on their personality traits, coping skills, experience and cultural background,

The study conducted in India by Abraham, et al., has reported the prevalence of emotional disorders and sources of stress in first year Malaysian students in an Indian medical school. It revealed that academic problems were greater sources of stress in first year medical students compared to non-academic problems [18]. Study by Supe AN has indicated that stress in medical students is common and is process oriented. Academic factors are greater perceived cause of stress in students. Emotional factors are found to be significantly more in first medical students. However stress is not stressor specific. It is dependent on personal ways of coping strategy and social support [19]. A high stress level may affect not only academic

performances, but also all aspects of student health [20]. The findings based on students at one school may not be applicable or generalized to first- year students at other schools [21]. The prevalence of stress in this study was higher among the female student's compared to their male counterparts is in accordance with the study by Backović DV et al., in which female students manifested high vulnerability to the stress [22].

The overall prevalence of stress in this study is similar to the study of Saipanish R (61.4%) and Nandi M, et al (52.5%) [14,23] but higher than the studies conducted by El-Gilany AH et al (43.7%) [24], Sherina MS, et al (41.9%) [25], Firth J (31.2%) [26] and Abraham RR, et al (37.3%) [18]. This could be either due to the difference in the instruments used in other studies or it could be a real difference. Stress in medical school is likely to predict later mental health problems but students seldom seek help for their problems, it is important for medical educators to know the prevalence, causes, and levels of stress among students, which not only affects their health but also their academic achievements at different points of time of their study period.

Limitations of the study

This cross-sectional study was based on self-reported information, provided by students of only first year medical students of only one medical college. Therefore, there is some potential for reporting bias, which may have occurred because of the respondents' interpretation of the question or desire, their emotions, in a certain way or simply because of inaccuracies of responses. Another longitudinal study could be carried out with a cohort of students, to investigate the levels of stress among students, in all the academic years of undergraduate medical course.

Recommendations

Encouraging students to promote their personal health. Teaching students how to plan, prioritize and identify sources of stress. Creation of a student welfare affair, with an active role that will represent the students with all their problems and also to plan for student's social activities is mandatory. Strengthening the bonds and trust between the students and staff are needed to dissolve any barriers and minimize the stressful environment that may be found in the faculty environment. It is also important that we discuss these results with students and explore ways in which we can work in collaboration to limit the factors that cause stress, decrease the negative effects that result from that stress, and provide appropriate support and treatment. Further research is needed to study in depth the precipitating factors for each type of stressors.

CONCLUSION

Being a medical student, it is an honor and achievement not for oneself and their family but also an expectation for the institution in their education and training progress. The results of the present study explored the stress and depression among medical students. Therefore, strategies to reduce academic pressures in medical students should take into consideration. Increasing motivation and support from friends, peers and seniors should be promoted for students in coping with problems in learning and life skills. Moreover, appropriate stress management may help students to become more motivated. More detailed psychological profiling of students might help to identify those who are psychologically unable to cope with medicine as a career, while distinguishing them from students who are empathic and receptive to the distress of others. Screening students once a year with self-report measures that evaluate stress, depression, and motivation may be helpful. This would identify students in need of individual counseling for stress management.

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CONFLICT OF INTEREST

Authors have no conflict of interest to declare

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