 DOI: 10.18231/2455-8451.2016.0003

Level of stress and its contributing factors among first year medical students

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Abstract

Background: Stress in medical students is a well documented fact that cannot be denied and more or less it is system oriented. Through a minimal amount of stress is essential to ignite a healthy and competitive spirit, but stress above that minimally accepted amount may hinder the overall growth of students; personal or professional.

Objective: The present study was designed to find out the level of stress among the first year MBBS students and factors associated with stress.

Material and Method: A cross sectional study was designed using Kessler K10 questionnaire to evaluate stress level among first year MBBS students. 100 Students from a newly started government medical college in north India region participated in the study.

Statistical Analysis: Microsoft excel 2007 software was used for analyzing data.

Results: The response rate of study was 84% e.g. 84 students out of 100 returned back the filled K 10 questionnaire. Prevalence of mild, moderate and severe stress was 39.28%, 21.43% and 3.57% respectively. Out of this 35.71% of the study group was not under stress.

Conclusion: The prevalence of stress is high in the study group. The major stressors among first year medical students were high expectation form parental side, huge syllabus, frequency of part completion tests, performance in examination, lack of sleep, low confidence level and lack of emotional and social support. Our study emphasize on early intervention to cope up stress in medical education system. Counseling sessions for students and arrangement of mentorship for them are demand of today.

Keywords: Medical students, Stress, Stressors, Medical education.

Introduction

The term stress was first used by endocrinologist Hans style in 1930's.(1) Stress is one's unique reaction to events that may or may not by problematic. It can be defied "our reaction to events, environmental or internal that challenged or exceed resources". Everyone has its unique criterion of coping resources and when these coping resources challenged or exceeded, stress usually results.(2) Medical education is taken as being stressful. Medical students face multiple anxieties as they transform from an insecure student to a young knowledgeable physician. The stress in medical training is a growing concerns these days.(3) Many studies have shown that medical students face high rate of psychological morbidity at various stages of their taming, specially at the beginning during first year.(4,5,6) Stress, health and emotional problems can lead to mental distress. They can also hamper cognitive functioning and learning, leaving a negative impact on it.(7)

An optimal level of stress, earlier known as 'favorable stress' can enhance learning, but excessive stress can lead to physical and mental health problems reducing the self esteem of the students.(8,9) In many medical schools, the environment itself imposes a pressure situation by giving an authoritarian and rigid system that encourages competition rather than cooperation among learners.(10) Vitaliano et al in their study pointed out three areas as source of stress among medical students: academic pressure, social issues and family problems.(11) The wellbeing of medical students, as the precursors to physician wellbeing, manifests a critical aspect of medical training.(12) In a Swedish study, 12.9% was the prevalence rate of depressive symptoms among medical students, out of which 2.7% of students had made suicidal attempts.(13)

In this study, the main emphasis was given to explore the factors related to stress and to find out the severity of stress in terms of past one month depression or psychological status using K10 questionnaire.

Material and Method

The present cross sectional study was conducted in 1st year undergraduate medical students enrolled for MBBS course at a newly started government medical college in state of Haryana in northern India. The participants were asked to fill Kessler 10 questionnaire to assess the level of stress along with another predesigned questionnaire that included a list of sources of stress.

The K10 questionnaire consist up of ten questions in the form of like "how often in the past did you feel tired or feel nervous or hopeless etc. The five possible responses ranges from "none of the time" to "All of the time" and accordingly scored from 1 to 5. The score of al1 the ten questions them summated to give a total maximum score of 50. The interpretation of the scoring is <20 no stress, 20-24 mild stress, 25-29 moderate stress and 30-50 severe stress.(14)

The second questionnaire was divided into different parts to evaluate the causative factors of stress in undergraduate students. Like first part was framed to find out the general information and demographic profile of the participants; second part was about different behavioral singes of the participants; the third part gave emphasis on physical signs, while the fourth part was restrained to find out different stress prone characteristics.

Verbal consent was taken from the participants and they were allowed to take their own time and privacy to fill up the questionnaire. Identity of the students was not disclosed.

Statistical Analysis: Microsoft excel 2007 software was used for analyzing data.

Results

Out of the 100 student who participate in the study, 84 completed and submitted the questionnaire. The response rate was 84%. The age of the student was in the range of 16.5 years to 21.5years. Out of 84 participates, 68students were male (80.1) and 16 were female (19.9%). All the students were Indian belonging to North India region.

Table 1: **Severity of mental stress based on Kessler 10 scale (n=84)**

K 10 score	Frequency	Percentage
< 20 No stress	30	35.71
20-24 Mild	33	39.28
25-30 Moderate	18	21.43
> 30 Severe	03	3.57

In one study, it has been found that 35.71% of participants were free from any kind of stress; 39.28% had mild stress, 21.43% moderate and 3.57% were suffering from severe stress.

Table 2: **Gender wise distribution of stress among participants**

K 10 score	Male (n=68)	Female (n=16)
< 20 No stress	2 (2.94%)	1 (6.25%)
20-24 Mild	13 (19.12%)	5 (31.25%)
25-30 Moderate	29 (42.65%)	4 (25%)
> 30 Severe	24 (35.29%)	6 (37.5%)

Table 3: **Comparison of stress level among male and female students**

Sex	Moderate to Severe	None or Mild	Mean±SD
Male (n=68)	15 (22.1%)	53 (77.9%)	20.85±4.46
Female (n=16)	6 (37.5%)	10 (62.5%)	22.75±5.14

P value = 0.141

Our study revealed a higher proportion of female students (37.5%) having moderate to severe depression than their male counterparts (22.1%) though there was no statistically significant difference between the two groups ($p>0.05$). The prevalence of stress was measured and compared with seven study variables working as stressors such as high expectation from parental side, huge syllabus, frequency of part completion tests, performance in examinations, lack of sleep, low confidence level along with lack of emotional and social support.

Table 4: **Factors influencing stress in medical students**

Stressors	Moderate to Severe (%)	None (%)
High expectation from parental side	77	23
Huge syllabus	71	29
Frequency of part completion tests	69	31
Performance in examinations	68	32
Lack of sleep	62	38
Low confidence level	52	48
Lack of emotional and social support	33	67

Most common stress factors revealed by our study based on the feedback given by the participants were high expectation from parental side (77%), huge syllabus (71%), frequency of part completion tests (69%), performance in examination (68%), lack of steep (62%), low confidence level (52%) and lack of emotional and social support (33%). All the participants in our study were residing in hostel only, as there was no day scholar.

Discussion

The concern about stress in undergraduate medical students has increased nowadays and it is well documented in various studies[2,4,5,6]. Stress not only hampers the learning ability of students but also hinders the academic performance too. Excessive stress can negatively affect the academic achievement of students. Students staying at hostel, living away from their family members first time in their life easily become victim of stress. Problems of accommodation and food habits create problems in new comers (1st year students).

In our study, stress was higher among female students (37.5%) as compared to their male counterparts (22.1%) though there was no statistically significant difference between the two groups. Bazmi Inam et al. reported high prevalence of stress in female (89.7%) as compared to males (60%).[15] Abdulghani et al also reported high prevalence of stress among females (75.7%) than males (57%).[16] On the contrary

study done by Nazma sultana in Bangladesh revealed high proportion of stress in male respondents (73%) compared to female counterparts (56%).[17] Other studies showed no difference in mean stress scores between male and female students.[4,18]

The performance in college and university level examination comes out to be the major stressor among first year medical students. The part completion tests are integral part of evaluation of students. Huge syllabus, lengthy textbooks, frequency and pattern of examination leads to stress among the medical students. Those students who take these things as burden feel stressed, while those who take it as a tool in learning process finds it useful. Many studies reported examination as common source of stress in medical students.[19,20] High parental expectations and home sickness in the hostels generates stress among first year medical students. Perlin et al in their study revealed low self esteem as a major stressor among medical students.[21]

Medical students in pursuit of achieving their goals lead themselves to time constraints for self, family, friends and sources of entertainment. Our study revealed that being a medical student is stressful and interventions are needed to cope up stress in medical education. Stress management workshops can be helpful for new comers. Students should be provided with mentors and counselors to whom they can share their feelings. Meditation, yoga and outdoor sport activities should be included in their curriculum to release stress. In United Kingdom, General medical council recommends that medical colleges should make provision to identify symptoms of stress that might be early signs of mental illness.[22] Countries like USA and Canada have already started health promotion programs in medical colleges and by doing so; reduced the negative effect of stress upon medical students.[23,24] Stress though a well documented entity in medical students is still to be explored further with more longitudinal research.

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