

## Assessment of Stress among First Year Medical Students of Chhattisgarh

Dr. Derbashree Sarkar <sup>1</sup>, Jayanta Saha <sup>2</sup>

<sup>1</sup>( Department Of Physiology , Pt Jawahar Lal Memorial Medical College Raipur. India)

<sup>2</sup>.(Department of Physiology , Chhattisgarh Institute Of Medical Sciences Bilaspur. India)

---

**Abstract:** Stress in medical students is not uncommon and is process orientated. Although minimal amount of stress is desirable in everyday life and is necessary to add a spark in a healthy competitive spirit, the undue stress has undesirable impact on students and also on one's mental and physical health. Medical colleges do have a stressful environment that often exerts a negative effect on the academic performance, physical health and psychological wellbeing of the students. The current study was undertaken to assess the levels & sources of stress among first year undergraduate medical students and to also find if medium of study in their school level also contribute to stress. Hence a cross sectional study was carried among 148 students with the help of Medical Students Stressor Questionnaire to evaluate the level of stress. Upon analysis of the result we found that Academic Related & Intrapersonal & interpersonal related and Teaching and learning related stress were the major sources of stress among the students. Our study highlights the need for interventions in to cope up stress in medical education. Student counseling and informal mentorship is need of hour.

**Keywords:** English medium, medical students, non-English medium, stress, stressors

---

### I. Introduction

After spending almost a minimum of eighteen years of his or her life under the umbrella of parents or guardians and most of them being guided by so called "Private tutors" still now ,a student after passing Pre medical examination get admission into a medical college to study a professional course for the first time in their lifetime. A medical college is a place which is mostly different from other professional colleges. After entering a medical college, a student for the first time experience so closely so many peoples' joy as during child birth and sorrow as during death of a patient in a place. These may cause some emotional disturbance to the student also for the beginning phases of student life.

In India Medical college environments are extremely stressful and have lead to many suicide and suicidal attempts by the medical students. Fear of failure, vast amount of content that has to be mastered, inability to cope with the high expectations of parents and peers are some of the common causes to be the most commonly observed sources of stress <sup>1</sup>.

In an era where admission to professional courses is of intense competition, many students may have to settle for educational program 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

### Assessment of Stress Among First Year Medical Students Of Chhattisgarh

not their choice. The professional educational program is highly stressful. Getting into the medical school is a matter of pride in India, but the challenges faced by students of being in medical school are often overlooked. Many studies have described the stressors of medical training and the associated negative consequences on the mental and physical health of medical students <sup>2-5</sup>.

Stress may be defined as the body's non-specific response to demands made upon it, or to disturbing events in the environment<sup>6-7</sup>. It may not be just a stimulus or a response but rather, it is a process by which we perceive and cope with environmental threats and challenges <sup>8</sup>. Personal and environmental events that cause stress are referred to as stressors <sup>9</sup>. In short, stress includes the emotional disturbances or changes caused by stressors. As per Linn & Zeppa <sup>10</sup> some stress in medical school training is needed for learning. Stress that facilitates learning is called 'favorable stresses' and stress that suppresses learning is called 'unfavorable stress'. Depending upon their cultural backgrounds, personal traits, experience and coping skills, medical students may perceive the same stressors differently. An optimal level of stress, referred to earlier as 'favorable stress', can enhance learning <sup>11</sup>. However, excessive stress can lead to physical and mental health problems <sup>12</sup>. It can reduce students' self-esteem <sup>11-13</sup> and may affect academic achievement and personal or professional development. Studies in the United States have suggested that the practice of medicine entails certain risks to the mental health of qualified medical students <sup>14</sup>, and numerous studies have revealed high rates of psychological morbidity in medical students at various stages of their training <sup>15</sup>. Other studies among medical students have

found that stress is associated with anxiety and depression<sup>16-17</sup>, interpersonal conflict<sup>18</sup>, sleep disturbances<sup>19</sup>, and poor academic or clinical performance<sup>10</sup>. Stress was also found to decrease attention, reduce concentration, impinge on decision making, and reduce students' abilities to establish good relationships with patients<sup>16</sup>.

As a consequence, students have reported feelings of inadequacy and dissatisfaction with clinical practice in the future. This may affect the lives of patients and the health of a community. Moreover, stress has also been linked to medical student suicide<sup>20</sup>, drug abuse<sup>21-22</sup>, and alcohol use<sup>23</sup>. A study conducted in the United Kingdom reported that over one-third of medical students suffered from emotional disturbances as measured by the General Health Questionnaire (GHQ)<sup>4-5</sup>. As there are very few data to find out if stress in a medical student is also related to their medium of study up to class twelve standards.

## II. Aim & Objectives

This study was undertaken with the following aims as follows.

1. To determine the prevalence of stress in first year medical students at Pt Jawahar Lal Memorial Medical College Raipur
2. To explore the sources and level of stress in these students.
3. To compare the stress levels between students from English medium background and non-English medium background.

## III. Methodology

A cross-sectional study was conducted in the department of Physiology at Pt. Jawahar Lal Memorial Medical College Raipur (ptjnmraipur). Study was conducted in accordance with the principles of good clinical practice and declaration of Helsinki. Prior ethical permission was taken from the Institutional ethical committee for the study. All students gave written consent for the study. A total of 150 first year undergraduate Medical students were selected as the respondents. Out of 150 students invited to participate in the study, 148 (98.6%)

completed and submitted the questionnaire. Two students were absent. The age of the students was in range of 17-21 years. Out of 148 participants, 180 (54%) were males and 68 (45.9%) were females.

Among these participants 58 (39.1%) had attended English medium school whereas 90 (60.8%) had gone to non-English Medium schools. A total of 65 (43.9%) had educational gap; the most common reason was preparation of pre-medical entrance test. Out of 148 students 88 (59.4%) were residing in the hostels of the institute, whereas 60 (40.5%) were day scholars.

In this study, the Medical Students Stressor Questionnaire<sup>24</sup>(MSSQ) was used to identify sources of stress. The semi-structured questions were distributed among the students in lecture hall. They were instructed to fill up the question within half an hour. The question was never revealed to the students before to prevent any bias. The items on MSSQ represent 40 events that have been reported to be possible sources of stress in medical students. Respondents were asked to rate each event in themselves during the recent weeks by choosing from five responses: 'causing no stress at all', 'causing mild stress', 'causing moderate stress', 'causing high stress' and 'causing severe stress'. The MSSQ is scored by assigning a value of zero to four for each of the respective responses. For example, a response of causing no stress at all' would be scored as zero and a response of causing severe stresses scored as four. The questions in the MSSQ were addressed to 6 domains of stress which are as follows,<sup>25</sup> **Related to Academic that is:** understanding lectures, examination, learning context, competition, falling behind in schedule, huge syllabus etc. **Skills related to Intrapersonal & interpersonal development :** verbal/physical abuse, task given by seniors ,conflicts with peers & teachers, health problems etc; **Teaching related:** inadequate study material, to maintain high attendance in class, lack of guidance, teaching skills, feedback from teachers etc; **Social related:** interruption by peers, love affairs related ,lack of time for friends and families, **motivation related:** parental wish, unwillingness; **Group activities related:** peer pressure, performance in projects , seminars and college functions.

Demographic data (age, gender) was obtained within the same questionnaire. Identities of the volunteers were kept confidential by randomly allocating IDs to the study participants. They were allowed to fill the questionnaire, seal the envelopes & drop them in a closed box.

Statistical analysis was done using Statistical Package for Social Sciences (SPSS) version 16. Two tailed 't' was done to compare the significance between two groups of student (Hindi and English medium)

Mean score of 0.00 to 1.00 – indicate mild stress 1.01 to 2.00 – moderate stress, 2.10 to 3.00 – high stresses and 3.01 to 4.00 – severe stresses

#### IV. Observations And Results

After Analysis of the mean score from the Table 1 it can be stated that, the Academic Related Stress (3.10), Intrapersonal & interpersonal related stress levels (2.96), Teaching and learning related stress (2.45) was high among the first year undergraduate students. So Academic Related & Intrapersonal & interpersonal related and Teaching and learning related stress (2.45) can be stated that they were the major sources of stress among the students., Social related stress (2.15), was the next high source followed by motivation related (1.92) and group activities related stress (1.71) in that order, in all of whom the stress levels was mild.

#### Assessment Of Stress Among First Year Medical Students Of Chhattisgarh

When we compared the stress levels in students from Non-English Medium background and English medium background by analyzing the mean score of the two groups in Table 2 the stress levels of Academic Related Stress, Intrapersonal & interpersonal related stress levels, Teaching and learning related stress and motivation related stress was high among the first year undergraduate students of Hindi medium background. While social related stress and group activity related stress was found to be higher in English medium background students. As P value was found to be 0.363 which is not less than 0.05 the comparison between the different mean values between the two groups is not statistically significant.

**Table: 1: Source of stressors in medical students and their mean scores**

| Sources of Stressors                | Mean Score ± SD |      |
|-------------------------------------|-----------------|------|
| Academic Related Stress             | 3.10            | 0.74 |
| interpersonal related stress levels | 2.96            | 0.92 |
| Teaching and learning               | 2.45            | 0.85 |
| Social related stress               | 2.15            | 0.78 |
| Motivation related                  | 1.92            | 0.75 |
| group activities related stress     | 1.71            | 0.61 |

**Table 2: Comparison of stress between students of Non-English medium and English Medium Background**

| Sources of Stressors                | Non -English medium<br>Mean Score ± SD |      | English Medium<br>Mean Score ± SD |      |
|-------------------------------------|--|------|-----------------------------------|------|
| Academic Related Stress             | 3.24                                   | 0.73 | 2.82                              | 0.42 |
| interpersonal related stress levels | 3.10                                   | 0.42 | 2.61                              | 0.23 |
| Teaching and learning               | 2.92                                   | 0.40 | 2.71                              | 0.26 |
| Social related stress               | 2.52                                   | 0.22 | 2.42                              | 0.18 |
| Motivation related                  | 1.92                                   | 0.08 | 2.12                              | 0.08 |
| group activities related stress     | 1.71                                   | 0.06 | 1.97                              | 0.07 |

Mean score of 0.00 to 1.00 – indicate mild stress 1.01 to 2.00 – moderate stress, 2.10 to 3.00 – high stress and 3.01 to 4.00 – severe stress

#### V. Discussion

A life without any challenge or pressure that is “stress,” would be under stimulating and deadly boring. Everyone needs a certain amount of “pressure” to perform at their best. But when the pressures exceed a person’s ability to cope, the result is stress. And, prolonged stress can set up a cycle of distress and cut down the

#### Assessment Of Stress Among First Year Medical Students Of Chhattisgarh

Ability to cope with ordinary situations too. Stress has been also described as a double-edged sword that can either stimulate and motivate the students to peak performance or reduce the students to ineffectiveness.<sup>26</sup>

In recent years the concern about stress during tenure of undergraduate medical training has increased. Various published literatures have documented high levels of distress among undergraduate medical students. Stress along with social, emotional, physical as well as family problems may hamper the learning ability and academic performance of a student. Excessive stress may cause mental and physical problems and may negatively affect the academic achievement of the student. In most of medical students the performance in college and university level examination is the major stressor. The formative and summative examination forms integral part of evaluation of students. Though examinations are necessary to motivate the students to study and achieve the desired goal of medical education. The vast syllabus, voluminous textbooks, pattern and frequency of examinations leads to stress among medical students. Examinations may precipitate stress in the students who consider it as burden, while it is useful who consider as a tool in taking corrective steps in learning. Studies of other academicians have also reported examinations as common source of stress in medical students<sup>27</sup>. Psychosocial factors may also act as stressor. The quality of parental care and high expectance from parents are also contributory factors to stress. Many first year students are away from the protective umbrella of parents for

very first time therefore there is feeling of homesickness in the hostels. Lack of self esteem in few students leads to depression. Low self esteem was also a major stressor in the study of Pearlin et al <sup>28</sup>.

The present study also revealed that students from Non –English medium background are more in stressful conditions than their counterparts who are from English medium background. A higher percentage of Non-English medium students confessed to more have stress compared to their English medium background counterparts, though the difference was not statistically significant

## VI. Conclusion

From our study it can be concluded that life of a medical student is stressful. Our study highlights the need for interventions in to cope up stress in medical education. Student counseling and informal mentorship is need of hour. Stress management workshops, soft skills development techniques at the entry of medical career would be helpful. Relaxation techniques like meditation, yoga and involvement in physical activities like outdoor sports can be recommended as stress busters. Stress though a well studied entity in medical students is yet to be explored further with more research. As regarding students from other than English medium background special classes may be arrange for them for understanding the subject.

## References

- [1]. Reem Rachel Abraham, Eva Mahirahbinti Zulkifli, Elaine Soh Zi Fan, Gan Ning Xin, Jennie Tan Geok Lim. A report on stress among first year students in an Indian medical school. *South East Asian Journal of Medical Education* 2009;3:1023-9.
- [2]. Aktekin M, Karaman T, Senol YY, Erdem S, Erengin H, Akaydin M. Anxiety, Depression and Stressful Life Events among Medical Students: A Prospective Study in Antalya, Turkey. *Med Educ*. 2001;35(1):12–17.
- [3]. Dahlin M, Joneborg N, Runeson Bo. Stress and Depression among Medical Students: A Cross Sectional Study. *Med Educ*, 2005;39:594–604.
- [4]. Firth J. Levels and Sources of Stress in Medical Students. *Br Med J (Clin Res Ed)*. 1986;292(6529):1177–1180.
- [5]. Guthrie EA, Black D, Bagalkote H, Shaw C, Campbell M, Creed F. Psychological Stress and Burnout in Medical Students: A Five-year Prospective Longitudinal Study. *J R Soc Med*. 1998;91(5):237–243.
- [6]. Rosenham DL, Seligman ME. *Abnormal Psychology* (2nd ed.) (New York: Norton. 1989).
- [7]. Selye H. *Stress without Distress* (New York: Harper & Row. 1974).
- [8]. Myers DG. *Stress and Health*. In: *Exploring Psychology* (6th ed.). New York: Worth Publishers. 2005; p. 402.
- [9]. Lazarus RS. Theory-Based Stress Measurement. *Psychology Inquiry*. 1990;1(1): 3–13.
- [10]. Linn BS, Zeppa R. Stress in Junior Medical Students: Relationship to Personality and Performance. *J Med Educ*. 1984;59(1):7–12.
- [11]. Kaplan HI, Saddock BJ. *Learning Theory*. In: *Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry*. 8th ed. Philadelphia: Lippincott Williams & Wilkins. 2000; p. 148-154.
- [12]. Niemi PM, Vainiomaki PT. Medical Students' Academic Distress, Coping and Achievement Strategies during the Pre-clinical Years, Teach Learn *Med*. 1999;11(3):125-134.
- [13]. Silver HK, Glick AD. Medical Student Abuse. Incidence, Severity, and Significance. *JAMA*. 1990;263(4): 527-532.
- [14]. Lloyd C, Gartrell NK. A Further Assessment of Medical School Stress. *J Med Educ*. 1983;58(12):964–967.
- [15]. Miller PM, Surtees PG. Psychological Symptoms and Their Course in First-year Medical Students as Assessed by The Interval General Health Questionnaire (I-GHQ). *Br J Psychiatry*. 1991;159:199–207.
- [16]. Shapiro SL, Shapiro DE, Schwartz GE. Stress Management in Medical Education: A Review of the Literature. *Acad Med*. 2000; 75(7):748–759.
- [17]. Rosal MC, Ockene IS, Ockene JK, Barrett SV, Ma Y, Hebert JR. A Longitudinal Study of Students' Depression at one Medical School. *Acad Med*. 1997;72(6):542–546.
- [18]. Clark EJ, Rieker PP. Gender Differences in Relationships and Stress of Medical and Law Students. *J Med Educ*. 1986; 61(1):32-40.
- [19]. Niemi PM, Vainiomaki PT. Medical Students' Distress—quality, Continuity and Gender Differences During a Six-year Medical Programme. *Med Teach*. 2006;28(2):136–141.
- [20]. Hays LR, Cheever T, Patel P. Medical Student Suicide, 1989–1994. *Am J Psychiatry*. 1996;153(4):553–555.
- [21]. Newbury-Birch D, White M, Kamali F. Factors Influencing Alcohol and Illicit Drug Use amongst Medical Students. *Drug Alcohol Depend*. 2000; 59(2):125–130.
- [22]. Pickard M, Bates L, Dorian M, Greig H, Saint D. Alcohol and Drug Use in Second-year Medical Students at the University of Leeds. *Med Educ*. 2000;34(2):148-150.
- [23]. Flaherty JA, Richman JA. Substance Use and Addiction among Medical Students, Residents, and Physicians. *Psychiatric Clin North Am*. 1993;16(1):189–197.
- [24]. Muhamad Saiful Bahri Yusoff, Ahmad Fuad Abdul Rahim, Mohd Jamil Yaacob. Prevalence and Sources of Stress among Universiti Sains Malaysia Medical Students *Malaysian J Med Sci*. Jan-Mar 2010; 17(1): 30-37
- [25]. Manjunath SM, Nagesh Raju G, Janardhan Singh, Ravish Kumar M. A Cross-Sectional Study On The Sources And Levels Of Stress Among Second Year Undergraduate Medical Students *National Journal Of Medical Research*. 2014; 4(4):314-317
- [26]. Shashank P. Behere, Richa Yadav, Prakash B. Behere. A Comparative Study of Stress Among Students of Medicine, Engineering, and Nursing. *Indian Journal of Psychological Medicine* 2011;33:145-8.
- [27]. Supe AN. A study of stress in medical students at Seth G. S. Medical College. *J Postgrad Med*. 1998; 44: 1-6.
- [28]. Pearlin LL, Lieberman MA, Menaghan EG, Mullan JT. The stress process. *J Health Soc Behav*. 1981; 22: 337-356.
- [29].