

## A Comparative Study on Stress among Undergraduate Medical New Entrants

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### Abstract

#### Background

stress is an inevitable part of medical education, and lack of adequate stress-coping skills may affect the students variedly. The present study was done to assess the prevalence and compare the levels of stress in the initial and final phases among medical new entrants.

**Material and methods:** The study was conducted as a prospective comparative study among 100 first year undergraduates- new entrants of thoothukudi medical college. Data was collected using the medical students stress questionnaire (mssq) after approval of institutional ethics committee.

**Results:** The prevalence of academic related stress was 38%, the maximum both in the initial and final phases of the new entrants. The intra and inter personal related stress were the minimum 9% during the initial and 12% during the final phase.

**Conclusion:** student mentoring, regular formative assessment and involvement in non academic activities like yoga would help to reduce stress.

**Key words:** Stress, Medical New Entrants, MSSQ

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### I. Introduction

The term Stress was coined by Hans Selye (known as Father of Stress Researcher) in 1936<sup>1</sup>. He defined stress as the non specific response of the body to any demand for change. World Health Organization defines stress as “the reaction people may have when presented with demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope”. A minimal stress is required in Medical Curriculum as a driving force for better learning, however Medical students experience remarkable stress all through their course also in their career as well.<sup>2</sup> Studies have shown that medical students are experiencing high levels of personal stress with adverse consequences on academic performance, competency, expertise and health. Medical students may also experience social, emotional and family problems which might be adding to their academic stress. In addition self-rated depression is also significantly higher in Indian Medical students. High rates of anxiety, depression and stress can result in poor quality of life and high rates of psychological morbidity. Medical courses in India are very demanding for students which involve emotional aspect as well, sometimes making career in medical education very stressful<sup>3</sup>. Stress is seen as the result of a mismatch between the requirements and demands of the job and the person’s real or perceived ability to meet these demands<sup>4</sup>. Task conflict can also result in stress, such as in the situation of medical students who are unclear about expectations by their medical teachers. The students are confronted by demands and expectations from a number of sources that cannot all be met within the time given<sup>5,6</sup>.

It has been postulated that the psychological health of the students at the start of the medical studies is almost similar to their non-medical counter parts. Medical students are exposed to a new learning environment, vastness of syllabus, frequent internal exams leave minimal opportunity to relax and recreate. High prospects from the parents, teachers and peers pose further influence on the students. Sleepless nights, depression, suicidal ideation, addictions to dependence-producing drugs for coping up with stress, and poor performance at examinations in spite of doing hard work are some of the ill effects of stress<sup>7,8</sup>.

### II. Objectives

- To assess the prevalence of stress among Medical students – New Entrants.
- To compare the levels of stress in the initial and final phases of the 1<sup>st</sup> year of MBBS Students.

### III. Materials & Methods

The study was conducted among the 1<sup>st</sup> year Undergraduate medical students (New Entrants) of Government Thoothukudi medical college. The study was done as a follow up comparative study among 100 students Of 2016 batch after obtaining the approval of Institutional Ethics Committee. The study tool was a self-administered questionnaire – Medical Students Stress Questionnaire (MSSQ). Data was collected from the students immediately after 2 months of admission and at the end of the 1<sup>st</sup> year before the exams. The students who gave informed written consent were asked to complete the questionnaire which also had questions on socio demographic details.

The identity of the students was kept anonymous by giving each student a random number and all their details were maintained confidentially.

Medical Students Stress Questionnaire (MSSQ).<sup>5</sup>

A stressor is defined as a personal or environmental event that causes stress. Stressors of medical students generally were grouped into six categories; academic related stressors (ARS), intrapersonal and interpersonal related stressors (IRS), teaching and learning-related stressors (TLRS), social related stressors (SRS), drive and desire related stressors (DRS), and group activities related stressors (GARS).

### STATISTICAL ANALYSIS

Data was entered in Microsoft Excel and analysed using the SPSS software (Version 20). Total prevalence and level of stress were calculated as a percentage of total number of students participated. Mean and standard Deviation of the stressors was also calculated.

### IV. Results

In the present study, among the 100 medical students studied, 62% were females and 38% were Males. The prevalence of Academic Related Stress was 38%, the maximum both in the initial and final phases of the First year students.

The intra and inter personal related stress was the minimum 9% during the initial and 12% during the final phase.

SRS was the only stressor whose prevalence was more in the initial phase (29%) than in the final phase (28%)

The prevalence of TLRS was 12% in the initial phase and 19% in the final phase.

DRS and GARS were more in the final phase as compared to the initial phase.

The Mean score of Academic related stress was more in the Final phase of first year than the initial phase and it was statistically significant.

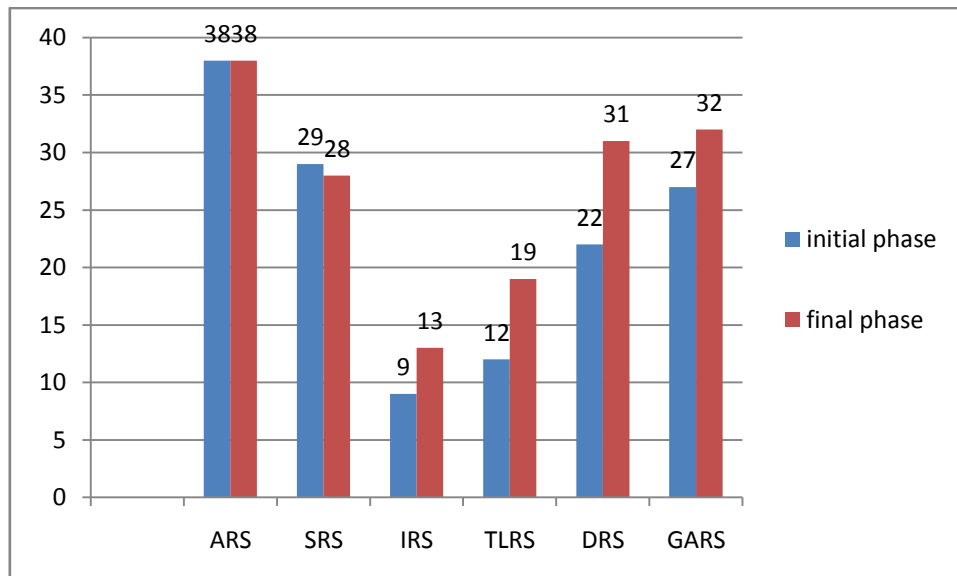


FIGURE 1: Comparison of prevalence of stress between initial and final phases of first year students

**TABLE 1: Mean Score of the Stressors**

STRESSORS	INITIAL PHASE	FINAL PHASE	P VALUE
ARS	1.3 ± 0.5	1.5 ± 0.5	<b>0.010*</b>
IPRS	0.5 ± 0.4	0.5 ± 0.4	0.553
TLRS	0.7 ± 0.5	0.7 ± 0.4	0.691
SRS	1.1 ± 0.5	1.1 ± 0.4	0.777
DRS	0.9 ± 0.7	0.8 ± 0.6	0.671
GARS	1.1 ± 0.5	1.2 ± 0.5	0.243

Mean Score: 0.00 to 1.00 - mild stress

1.10 to 2.00 - moderate stress

2.10 to 3.00 - severe stress

3.10 to 4.00 - very severe stress

IPRS, TLRS, DRS were mild in the current study while ARS and GARS were moderate both in the initial and final phases based on the mean scores.

### V. Discussion

Stress has become a part and parcel of a medical students life. Stress can either be favourable or unfavourable. Unfavourable stress suppresses learning ability and has a negative impact on the academic performance of the students<sup>9, 10</sup>. Although favourable stress is needed to motivate the students, high levels of stress have adverse effect on the learning capacity of cognitive effect on the medical students. Excessive stress among medical students can cause sleeping disturbances, GI disturbances, self-medication, consumption of drugs and alcohol and in advanced cases may urge them to commit suicide.

Therefore stress in medical students is an area of high priority to be studied.

In the current study, the academic stress at the Final phase was much higher than the initial phase and the difference in the stress was statistically significant. This could be due to the exam stress of the students and the urge to clear the final exams.

In the present study, it was observed that most of the New entrants were experiencing one or more of the different stressors. Academic stressors pose the major contribution to the overall stress in our study. This was similar to studies in Gupta et al in Kolkata<sup>11</sup>, Ghosal et al in Mumbai<sup>12</sup>, Sreedevi et al in Kurnool<sup>13</sup>, subitaPatil et al<sup>14</sup> and Jain et al<sup>15</sup>. The reason for this high academic related stress could be due to vast medical syllabus, coping up with the new social environment and being away from home.

The prevalence of ARS was highest 38% in our study which was much comparable with a study conducted by Jain et al<sup>(15)</sup> in which the prevalence was 34.1%. However SRS was the least reported in Jain et al<sup>15</sup> while it was IPRS in our study.

In a study conducted in Jordan<sup>16</sup>, also the ARS was the most prevalent 87%, however our study reported much less ARS compared to this. Lowest was the DRS. THE other stressors was also much high >80%.

Kishore surwase et al<sup>17</sup>, also reported high mean score of all stressors. ARS was the most reported concurrent with the present study. Kaufmann et al stated that those who perceived academic related stressors as having to severe risk of developing psychological distress in future.

M.S.B Yusoff et al in their prospective study stated that there was a significant deterioration of mental health during the first year of medical school as compared with before medical training<sup>18</sup>. In the current study also there was significant academic stress which can affect the mental health of the students. Guthrie et al in their prospective study also revealed that medical students repeatedly experience psychological distress during their course<sup>19</sup>.

In yet another study by M.S.B Yusoff et al there was significant increase in the percentage of distressed medical students during summative assessment<sup>20</sup>. In the current study also the academic related stress was significantly increased in the final phase which could be due to the fear of exams.

### VI. Conclusion

The present study revealed high level of academic stress among medical new entrants. Also the stress was much higher prior to the final exams.

Student mentoring would be effective to reduce such high academic stress. Also regular Formative assessments would reduce the burden of last minute exam preparation of the students. Periodic feedback

Involvement of students in non-academic activities like yoga, meditation, cultural activities and sports would help in alleviating stress.

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## References

- [1]. Siang Yong Tan, A Yip -Hans Selye (1907 – 1982): Founder of the Stress Theory , Singapore Medical Journal 59(4), 170, 2018
- [2]. Al Rasheed F, Naqvi AA, Ahmad R, et al. Academic stress and prevalence of stress related self-medication among undergraduate female students of health and non-health cluster colleges of a public sector University in Dammam, Saudi Arabia. *J Pharm Bio all Sci* 2017; 9:251.
- [3]. Shah C, Trivedi RS. Coping of stress by medical students. *J Clin. Diag Res* 2009; 19: 401–523
- [4]. Van Harrison R. Person-environment fit and job stress in: C.L. COOPER & R. PAYNE (Eds) *Stress at Work*. Chichester, UK: Wiley; 1978.
- [5]. Saiful M, Yusoff B; The Stability of MSSQ to Measure Stressors among Medical. *Int Med J.*, 2013; 20(2):1–3.
- [6]. Yusoff MSB; A Confirmatory Factor Analysis Study on the Medical Student Stressor Questionnaire among Malaysian Medical Students. *Educ Med J.*, 2011; 3(1):44–53.
- [7]. Sidik SM, Rampal L, Kaneson N. Prevalence of emotional disorders among medical students in a Malaysian university. *Asia Pac Family Med* 2003;2(4):213–7.
- [8]. Rajiv Radhakrishnan and Chittaranjan Andrade1, Suicide: An Indian perspective, *Indian J Psychiatry*. 2012 Oct-Dec; 54(4): 304–319.
- [9]. Siraj HH, Salam A, Roslan R, Hasan NA, Jin TH, Othman MN; Stress and its association with the academic performance of undergraduate fourth year medical students at UniversitiKebangsaan Malaysia. *Int Med J Malaysia*, 2014; 13(1):19–24.
- [10]. Linn BS, Zeppa R. Stress in junior Medical Students: relationship to personality and performance. *J Med Educ* 1984; 59:7-12.
- [11]. Gupta S, Choudhury S, Das M, Mondol A, Pradhan R. Factors causing stress among students of a Medical college in Kolkata,India. *Educ Health* 2015; 28:92-5
- [12]. KakoliGhosal, AbhiramBehera.,Study on prevalence ofstress in Medical students. *J Res Med Dent Sci*,2018,6(5):182-186.
- [13]. ArepalliSreedevi, GuthiVisweswaraRao, PardhuBharath, Karthik Reddy et al., Study on stress among first-year medical students of Kurnool Medical College, Kurnool .,International Journal of Medical Science and Public Health | 2016 | Vol 5 | Issue 05852
- [14]. SupriyaKomalsinghPatil, Umesh Suresh Patkar, KshitijaUmeshPatkar. comparison of levels of stress in different years of M.B.B.S. students in a medical college - an observational study. *International Journal of Contemporary Medical Research* 2016; 3(6):1655-1657.
- [15]. Jain S, Jain P, Jain A.K., Prevalence, Sources and Severity of stress among New Undergraduate Medical Entrants. *South-East Asian Journal of Medical Education*. Vol 11, no.1,2017.
- [16]. Munir Abu-H, Husam A , Muhammad Al-S, Mohammad H, Fadi A , Zouhair A, Jameel H . Sources and Predictors of Stress among Medical Students in Jordan. *Bull Env. Pharmacol. Life Sci.*, Vol 4 [6] May 2015: 113-121.
- [17]. KishorSurwase, PrashantBagdey , HemantAdikane:A cross sectional study of stress among Medical Students in Government Medical College, Nagpur Sch. *J. App. Med. Sci.*, Sep 2016; 4(9A):3229-3232.
- [18]. MuhamadSaifulBahriYusoff , Ahmad Faud Abdul Rahim , Abdul Aziz baba, SaifulBahari Ismail, MohamadNajib Mat Pa , AbRahmanEsa., Prevalence and associated factors of Stress, Anxiety and depression among prospective medical students. *Asian Journal of Psychiatry*; volume 6, Issue 2, Apr 2013, Pages 128-133.
- [19]. Guthrie E, Black D, Bagalkote H, Shaw C, Campbell M, Creed F., Psychological stress and burnout in medical students : A five – year prospective longitudinal study., *Journal of Royal Society of Medicine* ; Volume 91 May 1998.
- [20]. MuhamadSaifulBahriYusoff., Impact of Summative Assessment on First Year Medical Students’ Mental Health. *International Medical Journal* Sep 2011; 18(3):172-175.

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