

Analysis of Stressors among Undergraduate Medical Students in a Teaching Medical Institution of South India

Tinju James¹, Richard Sunny², Femina Jose³

ABSTRACT

Introduction: Medical students experience considerable amount of stress related to various domains such as academic related, social related, interpersonal related etc. It is important to look for the levels of stressors among medical students and intervene at appropriate time in order to improve the quality of medical professionals.

Material and methods: A cross sectional study was conducted amongst undergraduate medical students by providing a structured Medical Student Stressor Questionnaire (MSSQ 20) to assess the stressors. Stresses related to academic related, social related, interpersonal related data were statistically analyzed.

Results: This study included 136 students (73% females and 27% males). The mean age and BMI of the participants were 21.24 ± 1.74 years and 21.7 ± 3.3 kg/m² respectively. This study showed that medical students experience moderate levels of stress in all the domains of stress and a significant increase is noted in academic related stress (ARS) than other domains (p value <0.0001) followed by group activities related stress and social related stress.

Conclusion: ARS is acting as a major stress factor among all the stress domains in medical students of this study population. Appropriate measures should be taken to promote the physical and mental well-being of medical students and thereby ensuring academic excellence and good quality medical professionals.

Keywords: Body Mass Index, Medical Student Stressor Questionnaire, Psychological Distress, Stress, Stressor Related Disorders

INTRODUCTION

Stress is an inevitable part of life in medical students, which can alter the physical, mental or emotional wellbeing of a person.¹ It is a highly subjective phenomenon so that each person has different stress levels.² Several studies have shown that medical students experience different degrees of stress in their study period which could be attributed to problems associated with social relationships, academic difficulties, financial issues, health problems etc.^{1,3} In some individuals, stress can lead to an increased performance which could be one of the measures they adopt to cop up with the stress.⁴ The response by which a person perceives and adjusts with environmental threats and challenges is stress and the events that cause stress are known as stressors. The extent to which stress affects a person depends on its characteristics and the characteristics of those who have been affected. There could be variations in perceiving the same kind of stressors from person to person due to variations in the cultural background,

personal traits, experience and coping skills.^{5,6} It is a known fact that medical students undergo tremendous stress throughout their education and the lack of skill to adjust and manage stress may affect their physical and mental well-being.⁷ Studies have shown that an increased prevalence of psychological distress that range from depression to suicidal ideations was noted among medical students.⁸⁻¹⁰ These difficulties were seen more in medical students than compared to the general population. There could be stressors from various domains such as academic related, social related, interpersonal related etc which can negatively influence their wellbeing.^{11,12} This study was aimed to look at the levels of stressors among medical students as they are more prone for increased stress in their academic period.

MATERIAL AND METHODS

This was a cross sectional study conducted amongst undergraduate medical students during the period of November 2019 to January 2020 after taking their informed consent. The study was approved by Institutional Ethics Committee. A structured Medical Student Stressor Questionnaire (MSSQ 20) was used to assess the stressors among undergraduate medical students. The responses were marked from causing no stress at all as 0 to causing severe stress as 4. The questions addressed 6 domains of stress which were as follows-

Domain 1

Academic related stress (ARS): Getting poor marks, large amount of content to be learnt, Tests/Examinations, having difficulty to understanding the content, heavy workload, falling behind in reading schedule, quota system in examination, learning context full of competition, unable to answer questions from the teachers, lack of time to review what have been learnt, need to do well (self-expectation), not enough medical skill practice, unjustified grading process.

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How to cite this article: Tinju James, Richard Sunny, Femina Jose. Analysis of stressors among undergraduate medical students in a teaching medical institution of South India. *International Journal of Contemporary Medical Research* 2020;7(2):B5-B8.

DOI: <http://dx.doi.org/10.21276/ijcmr.2020.7.2.26>



DOMAIN 2

Skills related to intrapersonal and interpersonal development (IRS): Poor motivation to learn, conflicts with other students, verbal or physical abuse by personnel, verbal or physical abuse by other students, Verbal or physical abuse by teachers, conflict with teacher (s), conflict with personnel.

Domain 3

Teaching related stress (TLRS): Inappropriate assignments, uncertainty of what is expected of me, not enough study material, lack of recognition for work done, teacher lack of teaching skills, lack of guidance from teacher, not enough feedback from teachers, conflict with teachers, conflict with personnel

Domain 4

Social related stress (SRS): Facing illness or death of the patients, frequent interruption of my work by others, unable to answer questions from patients, talking to patients about personal problem, lack of time for family and friends, working with computers

Domain 5

Desire related stress (DRS): Parental wish, unwillingness, family responsibilities

Domain 6

Group activities related stress (GARS): Participation in class discussion, participation in class presentation need to do well (imposed by others), feeling of incompetence

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.

STATISTICAL ANALYSIS

SPSS version 23 was used to generate tables and graphs. The data were represented as Mean± SD. Pearson correlation coefficient was used to assess the correlation between BMI and the stress domains. Mann -Whitney U test was used for finding significant difference among the score of various stress domains. $p < 0.05$ was considered significant.

RESULTS

In the study 136 students were enrolled. Among them, 73% were females and 27% were males. The mean age and BMI of the participants were 21.24 ± 1.74 years and 21.7 ± 3.3 kg/m² respectively. 59.6% of the medical students belong to final year and 40.4% were in second year of their study. The mean score levels of stress related to domains academic

Domain	Mean score	P value
ARS	1.89± 0.60	0.0001
IRS	1.39± 0.90	
TLRS	1.41± 0.70	
SRS	1.44± 0.70	
DRS	1.00± 0.80	
GARS	1.50± 0.80	

Values are mean ± SD, $p = 0.0001$, Mann–Whitney U test significantly different from each other.

Table-1: Score of stress among the participants

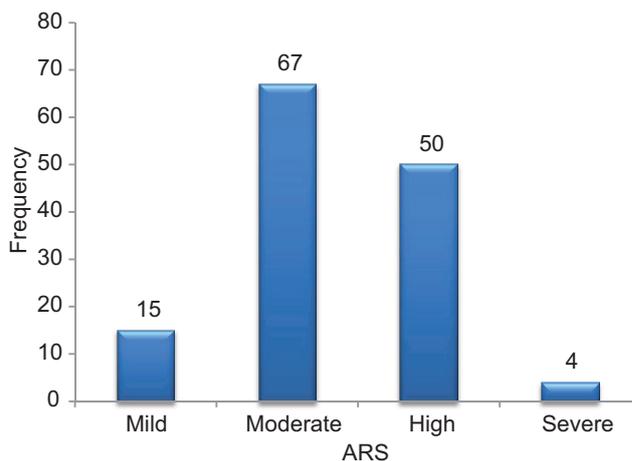


Figure-1: Levels of stress among the participants for ARS domains of stress

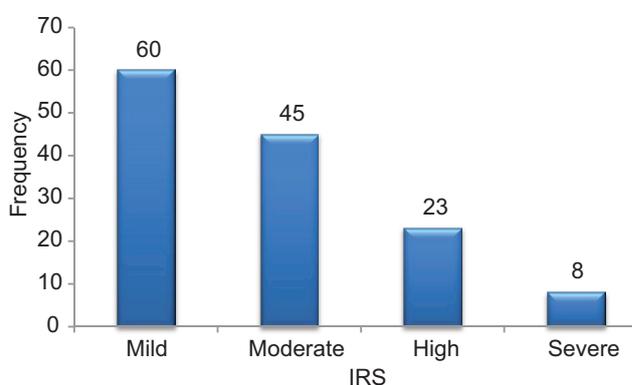


Figure-2: Levels of stress among the participants for IRS domains of stress

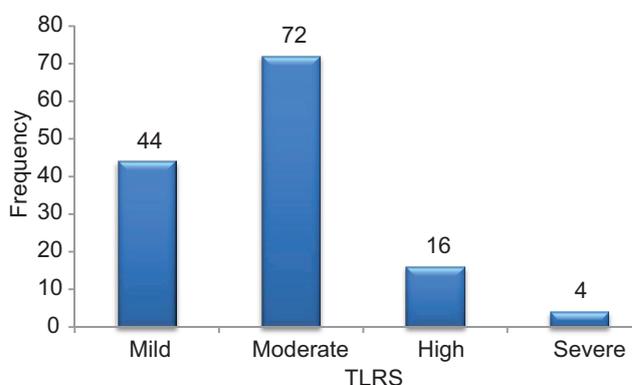


Figure-3: Levels of stress among the participants for TLRS domains of stress

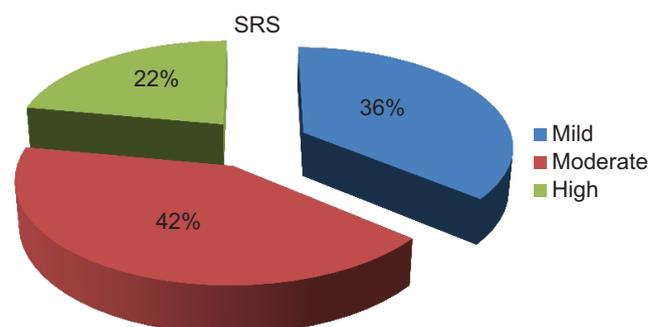


Figure-4: Levels of stress among the participants for SRS domains of stress

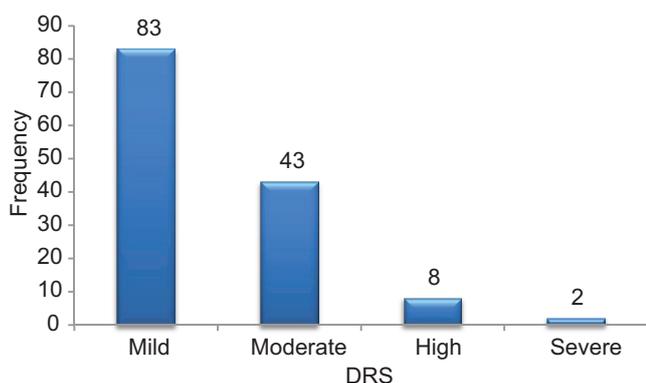


Figure-5: Levels of stress among the participants for DRS domains of stress

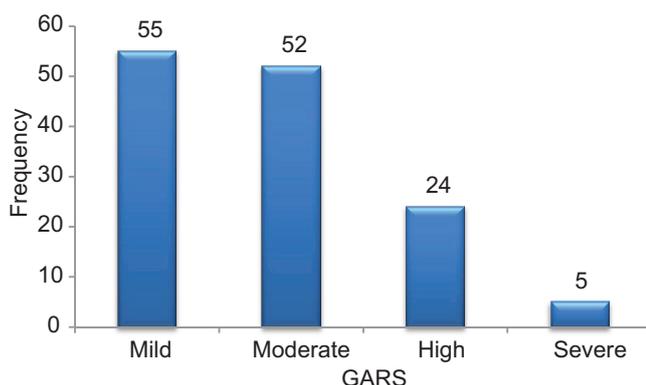


Figure-6: Levels of stress among the participants for GARS domains of stress

related (ARS), intrapersonal and interpersonal related (IRS) and teaching related (TLRS) were 1.89 ± 0.60 , 1.39 ± 0.90 and 1.41 ± 0.70 respectively. The SRS, DRS and GARS domains showed mean score levels of 1.44 ± 0.70 , 1.00 ± 0.80 and 1.50 ± 0.80 respectively. The mean score levels for all domains of stressors were represented in the table 1. There is no significant correlation of BMI with any of the stress domains. This study showed that medical students experience moderate stress levels in all the domains of stress and a significant increase is noted in ARS than compared to other domains (p value < 0.0001). This is followed by GARS and SRS. The high stress domain is more observed for ARS, while moderate for TLRS and severe for IRS. Mild stress was prevalent for DRS.

The levels of stress experienced by medical students in each of the stress domains were represented in the Figure 1-6. Considering ARS domain, a significant increase in moderate to high stress levels was noticed i.e. 49.3% of students experience moderate stress & 36.8% of the students experience high stress. 52.9% of the students express moderate stress in TLRS domain. In taking SRS, 41.9% and 22.1% of the study group express moderate and high stress respectively. Mild to moderate levels of stress pattern was preferentially seen for GARS, IRS and DRS domains.

DISCUSSION

This study showed that academic related stress is acting a major stress factor among all the stress domains in this

population which is followed by GARS and SRS. Previous studies found out that the major stressor among the medical students were academic related followed by Social related stress.^{6,13,14}

Among the responses related to academic related stressors, large amount of content to be learnt exerted high stress on the students compared to other questions which showed moderate stress levels. This is in consistent with the results obtained from study done by Mehfooz et al among undergraduate medical students.¹ This could be because of the vast area of the subject which has to be covered in a short duration or due to the lack of proper and regular learning habits.

In terms of GARS, most of the students expressed moderate stress related to concept of need to do well impose by others. This could be related to the conflicts and difference of opinion in group related activities. A healthy and balanced team work can ensure a better environment among medical students to reduce their stress levels. This is in accordance with the results obtained in the study done by Patil et al. among medical students.⁶

Among SRS, facing death of the patients exerted a moderate stress in most of the students which indicates that a proper counseling may be needed for the students to handle such situations. Among IRS and TLRS domains, conflict with other students and uncertainty of what is expected from student mostly exerted moderate stress on them, which implies that a healthy relationship among the students and proper guidelines from the teachers do have a role in reducing the stress related to the above domains. DRS had least influence on the stress levels.

When exposed to stressful condition for a long time can lead to poor academic performance, unpleasant social relationships, memory loss and health problems like obesity, hypertension, diabetes etc.^{15,16} Identifying the stressors in medical students can promote early intervention in the form of counseling and other supportive measures in their study period to ensure their physical and mental wellbeing.

CONCLUSION

Academic related stress is acting a major stress factor among all the stress domains in medical students followed by Group activities related stress and Social related stress. Measures should be taken to reduce the stress levels in medical students so that they can maintain their physical, mental and social well-being and also to ensure academic excellence.

ACKNOWLEDGEMENTS

The author acknowledges the valuable help of Dr. Ajith TA, Professor, Department of Biochemistry, Amala Institute of Medical Sciences, Thrissur, Kerala, India during the preparation of this manuscript

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Source of Support: Nil; **Conflict of Interest:** None

Submitted: 02-01-2020; **Accepted:** 09-02-2020; **Published:** 29-02-2020