

Original Research Article

A cross sectional study of stress among Medical Students in Government Medical College, Nagpur

Dr. Kishor Surwase¹, Dr. Prashant Bagdey², Dr. Hemant Adikane³

¹Assistant Professor, Department of Community Medicine, MNR Medical College, Sangareddy, India

²Associate Professor, Department of Community Medicine, Government Medical College, Nagpur, India

³Post Graduate Student, Department of Community Medicine, Government Medical College, Nagpur, India

***Corresponding author**

Dr. Kishor Surwase

Email: drkishorsurwase@gmail.com

Abstract: The medical education in India is demanding as far as students' efforts are concerned. Fear of failure, vast amount of content that has to be mastered, inability to cope with the high expectations of parents and peers are found to be the most commonly observed sources of stress. The objective is to obtain sources of stress among medical students at Government Medical College, Nagpur. Present observational descriptive cross-sectional study was conducted from March & April 2016 among 244 medical students at Government Medical College, Nagpur using self-administered MSSQ questionnaire. Mean age of students in this study was 20.17 years with SD of 0.92 years. Academic related stress was found to be having mean of 2.96 with SD of 0.70, which was on top of the list with other stressors. Followed by, Intrapersonal & interpersonal related stressors, Teaching and learning related stressors, Group activities related stressors, Social related stressors, Drive and desire related stressors. A significant number of study participants in our setting suffer from moderate to high stress. Strategies are required to decrease the burden of academic stress in the students.

Keywords: MSSQ, Stress, Medical Students, ARS

INTRODUCTION

Medical education has been reported to be one of the most stressful academic curricula worldwide, negatively affecting the physical and mental health of medical students. Examination fear, high parental expectations, peer pressure, lack of leisure time, financial problems, relationship disharmony, and aspirations for higher studies are some of the many factors known to contribute to the development of stress among undergraduate medical students [1].

A student can be stressed due to different reasons or stressors such as the academic, financial problem, health problem or loss of close family member or friend, etc. It is the persons' ability to face the everyday challenges which will determine whether he/she will be stressed or not. Stress in academic situation can have both positive and negative consequences. Stress can inhibit and suppress learning, which is called 'unfavourable stress' and is associated with inhibition of students' academic performance [2].

The medical education in India is demanding as far as students' efforts are concerned. It has been

observed that medical school environments in India are extremely stressful and has led to suicidal attempts by the 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 found to be the most commonly observed sources of stress [3]. A few studies in India have studied the prevalence of stress and stressors responsible in medical students. The present study was planned to obtain information about sources of stress among medical students at Government Medical College, Nagpur.

MATERIALS AND METHODS

The present descriptive cross sectional study was conducted among second and third year medical students of Government Medical College, Nagpur in month of march and April 2016. Approval from Institutional Ethics Committee was obtained before commencement of study. After explaining the purpose of study to them written informed consent was obtained from all participants. Students who were ready to give consent were enrolled in the study. Sample size is calculated from Gupta S *et al* in which prevalence of stress is 91.2 %. α being 0.01, Sample size comes to

213 students [1]. Modified sample size after assuming 10% non-response was 235 students.

Data collection tools: A questionnaire which consist of having relevant demographic profiles such as age, gender, year of education were collected by a structured demographic form. Other part consists of the Medical Students Stressor Questionnaire was used to identify sources of stress [4–7] The items on MSSQ represent 40 events that have been reported to be possible sources of stress in medical students.

The questions in the MSSQ were addressed to 6 domains of stress which included, Academic related Stressor (ARS): involving examination, learning context, competition, falling behind in schedule etc. Intrapersonal & interpersonal Stressor (IRS): verbal /physical abuse, conflicts with peers & teachers, health problems etc.; Teaching & Learning related Stressor (TLRS): inadequate study material, lack of guidance, teaching skills, feedback from teachers etc.; Social related Stressor (SRS): interruption by peers, lack of time for friends and families, Drive related Stressor (DRS): parental wish, unwillingness; Group activities related Stressor (GARS): peer pressure, performance and discussion.

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. The reliability coefficients of the stressor groups ranged from 0.64 to 0.92. For example, a response of causing ‘no stress at all’ would be scored as zero and a response of causing ‘severe stress’ scored as four.

The degree or level of stress were classified as: level 0-1.00 'causing nil to mild stress', level 1.01-2.00 'causing mild to moderate stress', level 2.01-3.00 'causing moderate to high stress' and level 3.01-4.00 'causing high to severe stress' [4, 7]. Before administering the questionnaire, a pilot test was conducted among 50 undergraduate students and finalized the questionnaire accordingly. The MSSQ-40 stress measurement tool was found to be reliable in our Indian setting through a high Cronbach’s alpha for the 40 item overall stress scale and its subscale measuring academic stress of medical students [1, 3, 8].

The questionnaire was self-administered and distributed to the medical students. The students were told to follow the instructions. The process of filling in the questionnaire took on an average about 30 minutes to complete. Data collection was performed in the mid of 2016 academic session. We chose this period to avoid the stressful examination period, which could potentially contribute to measurement bias. Thus, we reasoned that the level measured was representative of the natural level of stress in medical students.

Statistical Analysis

Then data was entered with help of Epi Info ver 7.1 and analysed with STATA 13.1 ver. The mean and standard deviation scores of different groups of stressors were calculated.

RESULTS

Total 249 questionnaire were returned out of 260 distributed which translates into 95.77% response rate. There were 119 male and 125 female students who returned completely filled up questionnaire; whereas 5 questionnaire were incomplete hence removed from analysis. Mean age of students in this study was 20.17 years with SD of 0.92 years.

Table 1: Sources of stress in study population

Sr. No.	Sources of stress	Scores*
1	Academic related stressors (ARS)	2.96 ± 0.70
2	Intrapersonal & interpersonal related stressors(IRS)	2.43 ± 0.93
3	Teaching and learning related stressors(TLRS)	2.49 ± 0.78
4	Group activities related stressors (GARS)	2.34 ± 0.84
5	Social related stressors (SRS)	2.24 ± 0.70
6	Drive and desire related stressors (DRS)	2.16 ± 0.93

*Mean score ± S.D.

Table 2: Comparison of Stress between Female and Male Students

Sr. No.	Sources of stress	Mean score ± S.D.	
		Female	Male
1	Academic related stressors (ARS)	3.00 ± 0.69	2.91 ± 0.70
2	Intrapersonal & interpersonal related stressors (IRS)	2.64 ± 0.94	2.21 ± 0.93
3	Teaching and learning related stressors(TLRS)	2.45 ± 0.78	2.53 ± 0.78
4	Social related stressors (SRS)	2.22 ± 0.70	2.26 ± 0.70
5	Drive and desire related stressors (DRS)	2.06 ± 0.93	2.27 ± 0.93
6	Group activities related stressors (GARS)	2.38 ± 0.84	2.30 ± 0.84

DISCUSSION

A life without any challenge or pressure, i.e., “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 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 [3].

In our study academic related stress was having higher mean score as compared with other domains, which is seen in other studies conducted by other authors as well [1, 2, 9–11].

The present study revealed that female students perceived more stress levels than their male counterparts. In a study done on Malaysian Medical students, the academic/non-academic stressors were more commonly seen among male medical students as per Johari *et al.* [11]. A higher percentage of female students confessed to have stress compared to their male counterparts. Some other studies have also revealed higher levels of stress in female students [2, 8, 10, 11]. Previous study showed a number of academic related stressors that included test and examinations, a big range of content to be learnt, lack of time to do the revision, poor marks, having self expectations to do well, insufficient skill in medical practice, falling behind in reading schedule, heavy workload, difficulty in understanding the content, and inability to answer teachers’ questions [2].

Intrapersonal & interpersonal related stressors were similar to study conducted by Manjunath *et al* [3] but higher as compared to study conducted by Balasubramaniam R *et al* [9]. Teaching and learning related stressors were higher than by Manjunath *et al* [3]. Intra-Interpersonal Related Stressor (IRS) and Social Related Stressors (SRS) were found high as findings from other authors [3, 11–13].

This could be due to besides pursuing education in medical college; a student also gets to socialize with different kinds of people and undergo psychological development. Students faced a changing of education system, lifestyle and social environment. They meet people of different ages and backgrounds. Thus interpersonal skills were needed to socialize with the people around them.

Social related, Drive related, Group activities related stressors were similar other authors [1, 3, 8, 13]. MSSQ having a high score in a particular stressor group generally indicates that the subjects perceive

events, conditions or situations from that particular group as causing the subjects stress. The scores, however, do require frank and honest response in order for it to be of any use. The scores are also affected by factors which can falsely increase or lower the scores, but generally the validity and reliability studies have indicated that the scores from the questionnaire are highly trustworthy [8].

Major strength of our study is higher response rate and larger sample size which increased power of study. Sources of stress were assessed with help of validated questionnaire which is used already by many authors in India.

LIMITATIONS

This cross-sectional study was based on self-reported perception provided by students. Therefore, there is some potential for recall bias which may have occurred because of the respondents’ understanding of the questions or wish to report their emotions in a certain way. So this can be overcome with longitudinal study which could be carried out with a cohort of students to investigate the levels of stress among students in all the five years of undergraduate medical years and the associated factors.

Due to cross sectional study design, no temporal relationship was established as it did not show direct cause and effect.

Also psychological morbidity among students was not studied. Many researchers studied a significant correlation between stress and academic achievement in both genders. The most common view of stress towards academic achievement was its negative relationship with academic performance. A detailed qualitative study to identify sources of stress was not carried out and correlation between stress and academic performance was not studied [2, 10, 13].

CONCLUSIONS

A significant number of study participants in our setting suffer from moderate to high stress. Academic stress has maximum was the most broadly source of stress found and thus most often contributed to overall stress scores. Females show more stress as compared to males. Strategies are required to decrease the burden of academic stress in the students.

Once the quality and levels of stress are identified, coping strategies should be adapted which will help in preventing stress-related problems. This paper offers other medical schools and academic planners a window or guideline for a comprehensive use of personal and professional development activities of the students to cope with the academic related

matters and also to develop confidence among students for better adjustment in classroom, group and society.

RECOMMENDATIONS

Wellness and mental health programmes are needed to help students make smooth transition between different learning environments with changing learning demands and a growing burden on their mental and physical capacity.

Medical schools should expose the students to various coping strategies such as stress management, decision making in a tough situation, breaking bad news, team building, managing diversity, spiritual development, reflective skills, interfaith discussion, etc. in order to promote and produce stress free holistic confident practitioners.

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