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Research article

LEVEL OF STRESS IN FINAL YEAR MBBS STUDENTS AT RURAL MEDICAL COLLEGE: A CROSS-SECTIONAL STUDY

*Shelke Umesh S[1], Kunkulol Rahul R[2], Narwane Sandeep P[3]

[1]Undergraduate Student[1], Professor[2], Assistant Professor[3], Department of Pharmacology, Rural Medical College (PIMS-DU), Loni, Ahmednagar, Maharashtra

*Corresponding author email: umeshshelke01@gmail.com

ABSTRACT

Introduction: Stress, defined as an imbalance between environmental conditions necessary for survival and the ability of individuals to adapt to those conditions, have a high prevalence in MBBS students. A variety of stressors play a significant role in developing stress. **Objective:**To study the level of stress and stressors responsible in Final MBBS students of Rural Medical College, Loni. **Methods**: A descriptive cross sectional study was carried out in 100 students (50 of either sex) willing to participate in the study. They were subjected to fill the Medical Student Stressor Questionnaire, which consists of 40 questions for evaluating the stressors and severity of stress perceived by the subjects. **Results**: 71% subjects' perceived moderate stress, while 13% and 16% perceived high and mild stress respectively. Academic stressor counted for moderate stress in 63% and high stress in 24 % of subjects, which was higher than other stressors. **Conclusion**: Academic stressors being the major stressor perceived, Strategies are required to decrease the burden of academic stress in the students.

Keywords: Stress, Medical Student Stressor Questionnaire, Medical students

INTRODUCTION

Stress is defined as an imbalance between environmental conditions necessary for survival and the ability of individuals to adapt to those conditions. [1]Studies have revealed a high prevalence of stress in medical students, ranging from 30% to 50%.[2-7] Learning a lot of new information in a relatively short time, with the pressure of exams, cause development of stress in medical students.[8] A stressor is defined as a personal or environmental event that causes stress.[9,10]

Stressors of medical students can be grouped into academic related, intrapersonal and interpersonal related, teaching and learning-related, social related, drive and desire related and group activities related stressors.[3] One or more of such stressors might act at the same time and contribute in development of stress among students.

Excessive amount of stress in medical training predisposes students to have difficulties in solving interpersonal conflicts, sleeping disorder, decreased attention, reduced concentration, temptation to cheat on exams, depression, loss of objectivity, increased incidence of errors, and improper behavior, such as negligence. Stress may also manifest in the form of headaches, gastrointestinal disorders, coronary heart disease, impaired judgments, absenteeism, self-medication, suicidal ideation, depression and the consumption of drugs and alcohol. [11,12]

A few studies in India have studied the prevalence of stress and stressors responsible in medical students. The present study (references from folder Indian references) was planned to study of stress in last year medical students at Rural Medical College.

METHODS

A descriptive cross sectional study was conducted with a study population of 100 medical students (50 of either sex) in III MBBS from Rural Medical College, Loni, Ahmednagar. Duration of the study conducted form 1st February 2014 to 1st March 2014.

IEC approval was taken before the commencement of study.

Students who were ready to give consent were enrolled in the study and inclusion and exclusion criteria were applied. III MBBS students (third semester) of either sex consenting to participate were included in the study. Students not ready to participate or of other year were excluded from the study.

The participants were subjected to medical Student Stressor Questionnaire (MSSQ)[3]

The MSSQ consists of 40 items representing the six stressor domains. Each item was answered in the form of score as shown in table 1

Table 1: Scoring of items in MSSQ scale

Grades	Details
0	No stress
1	Mild stress
2	Moderate stress
3	High stress.
4	Severe stress.

The 40 items were divided into sections A (20 items) and B (20 items) respectively. Total score of A and B of each domain was divided by following value and results were interpreted. [3]

1. Academic related stressors (ARS) =13
2. Intrapersonal and interpersonal related stressors (IRS) =7
3. Teaching and learning-related stressors (TLRS) =7
4. Social related stressors (SRS) =6
5. Drive and desire related stressors (DRS) =3
6. Group activities related stressors (GARS) =4

Interpretation:

0.00-1.00 causes mild stress

1.01-2-00 causes moderate stress

2.01-3.00 causes high stress.

3.01-4.00 causes Severe stress.

The mildest type of stress means it does not cause any or mild stress. The moderate type indicated that it caused reasonable, but manageable stress. The highest type of stress indicated lot of stress and causes emotional disturbances and mildly compromises daily activities. The severe stress indicates severe emotional disturbances and compromise of daily activities.

Statistical Analysis: Data were analysed by Chi-square test.

RESULTS

Moderate type of stress due to academic related stressors was commonly seen in final year MBBS students in both genders. 33% females and 30% males showed Moderate type of stress. 15% females showed a high type of stress as compared to 9% in males. Severe type of stress was seen in one meal. 80% of males and 96% of females suffered from moderate, high or severe type of stress due to academic related stressors. (Table 2)

Table 2: Distribution between Academic related stressors (ARS) and Gender

Type of Stress Caused due to ARS	Males (%)	Females (%)	Total (%)
Mild (0-1)	10(20%)	2(4%)	12(12%)
Moderate(1-2)	30(60%)	33(66%)	63(63%)
High	9(18%)	15(30%)	24(24%)
Severe	1(2%)	0(0%)	1(1%)
-	50(100%)	50(100%)	100(100%)

Value of χ^2 =7.976, d.f. = 3, significant, $p<0.05$

By applying Chi-square test there is a significant association between ARS and gender ($p<0.05$)

Table 3: Distribution between Intrapersonal and interpersonal related stressors (IRS)

Type of Stress Caused due to IRS	Males (%)	Females (%)	Total (%)
Mild	15(30%)	13(26%)	28(28%)
Moderate	25(50%)	29(58%)	54(54%)
High	10(20%)	8(16%)	18(18%)
Severe	0(0%)	0(0%)	0(0%)
	50(100%)	50(100%)	100(100%)

Table 3 shows the frequency of stress due to IRS. Moderate type of stress due to intrapersonal and interpersonal related stressors in final year MBBS students was higher in both genders. 29% females and 25% males showed the moderate type of stress. 10% males and 8% females showed a high type of stress due to intrapersonal and interpersonal related stressors. 70% of males and 74% of females suffered from moderate to high type of stress in this category.

Table 4: Distribution between Teaching and learning-related stressors (TLRS) and Gender.

Type of Stress Caused due to TLRS	Males (%)	Females (%)	Total (%)
Mild	17(34%)	11(22%)	28(28%)
Moderate	29(58%)	30(60%)	59(59%)
High	4(8%)	9(18%)	13(13%)
Severe	0(0%)	0(0%)	0(0%)
	50(100%)	50(100%)	100(100%)

Value of χ^2 =3.226, d.f.=2, significant, p<0.05

By applying g Chi-square test there is a significant association between Teaching and learning-related stressors (TLRS) and sex (p<0.05)

Table 4 showed more number of moderate type of stress due to teaching and learning-related stressors (TLRS) in the final year MBBS students in both genders. 30% females and 29% males showed the moderate type of stress. 17% males showed a mild type of stress and 9% females showed a high type of stress due to teaching and learning-related stressors (TLRS). 66% of males and 78% of females suffered from moderate to high type of stress.

Table 5: Distribution between Social related stressors (SRS) and Gender

Type of Stress Caused due to SRS	Males (%)	Females (%)	Total (%)
Mild	20(40%)	14(28%)	34(34%)
Moderate	26(52%)	28(64%)	54(54%)
High	4(8%)	8(16%)	12(12%)
Severe	0(0%)	0(0%)	0(0%)
	50(100%)	50(100%)	100(100%)

Table 5 displays the more moderate type of stress due to social related stressors (SRS) in final year MBBS students in both genders. 28% females and 26% males showed the moderate type of stress. 20% males showed a mild type of stress and 8% females showed a high type of stress due to social related stressors (SRS). 60% of males and 80% of females showed moderate to high type of stress.

Table 6: Association between Drive and desire related stressors (DRS) and Gender

Type of Stress Caused due to DRS	Males (%)	Females (%)	Total (%)
Mild	31(62%)	24(48%)	55(55%)
Moderate	16(32%)	19(38%)	35(35%)
High	3(6%)	5(10%)	8(8%)
Severe	0(0%)	2(4%)	2(2%)
	50(100%)	50(50%)	100(100%)

Value of χ^2 =3.648, d.f.=3, significant, p<0.05

By applying g Chi-square test there is a significant association between Drive and desire related stressors (DRS) and sex (p<0.05)

Table 6 shows more subjects showing mild type of stress due to drive and desire related stressors (DRS) in the final year MBBS students in both genders. 31 % males and 24% females showed the moderate type of stress. 19% females showed a mild type of stress, 5% females showed a high type of stress and 2% femalesshowedsevere type of stress due to drive and desire related stressors (DRS). 38% of males and 52% of females showed moderate to severe type of stress.

Table 7: Association between Group activities related stressors (GARS) and Gender

Type of Stress Caused due to GARS	Males (%)	Females (%)	Total (%)
Mild	21(42%)	18(36%)	39(39%)
Moderate	22(44%)	23(46%)	45(45%)
High	6(12%)	8(16%)	14(14%)
Severe	1(2%)	1(2%)	2(2%)
	50(100%)	50(100%)	100(100%)

Table 7 showed a more moderate type of stress due to group activities related stressors (GARS) in the final year MBBS students in both genders. 22 % males and 23% females showed the moderate type of stress. 21% males showed a mild type of stress, 8% females showed a high type of stress and 1% males&femalesshowedSevere type of stress due to group activities related stressors (GARS).

Table 8 Stressors according to rank of mean degree of stress perceived by medical students. Test and examinations were the only item that caused moderate to high stress among students. All other items fell under the category of mild to moderate stress except working with computers and talking to patients about personal problems.

Degree of stress classification: 0 - 1.00 is ‘causing nil to mild stress’, 1.01 – 2.00 is ‘causing mild to moderate stress’, 2.01 – 3.00 is ‘causing moderate to high stress’ and 3.01 – 4.00 is ‘causing high to severe stress’7

Table 8: Stressors according to rank of mean degree of stress perceived by medical students (by MSSQ)

Item	Mean ±SD
Causing moderate to high stress	
Tests/examinations	2.17±1.11
Causing mild to moderate stress	
Getting poor marks	1.96±1.26
Large amount of content to be learnt	1.9±1.13
Not enough medical skill practice	1.88±1.16
Facing illness or death of the patients	1.88±1.30
Need to do well (self-expectation)	1.85±1.18
Lack of time to review what have been learnt	1.84±1.08
Unjustified grading process	1.81±1.18
Quota system in examinations	1.78±1.29
Heavy workload	1.73±1.13
Need to do well (imposed by others)	1.71±1.17
Uncertainty of what is expected of me	1.69±1.19
Frequent interruption of my work by others	1.68±1.09
Conflict with teacher(s)	1.66±1.04
Lack of recognition for work done	1.64±0.99
Verbal or physical abuse by teacher(s)	1.63±1.20
Unable to answer questions from patients	1.59±1.17
Conflict with personnel(s)	1.57±1.24
Learning context - full of competition	1.48±1.11
Family responsibilities	1.48±1.31
Inappropriate assignments	1.47±0.96
Verbal or physical abuse by personnel(s)	1.47±1.18
Teacher - lack of teaching skills	1.46±1.29
Poor motivation to leam	1.43±1.16
Verbal or physical abuse by other student(s)	1.41±1.23
Not enough feedback from teacher (s)	1.41±0.96
Lack of time for family and friends	1.4±1.01
Participation in class presentation	1.39±1.18
Unable to answer the questions from the teachers	1.36±0.97
Having difficulty understanding the content	1.33±0.92
Feeling of incompetence	1.33±1.08
Falling behind ill reading schedule	1.31±1.10
Conflicts with other students	1.25±0.99
Participation in class discussion	1.16±1.14
Lack of guidance from teacher (s)	1.14±1.05
Not enough study material	1.13±1.12
Unwillingness to study medicine	1.02±1.04
Parental wish for you to study medicine	1.01±1.22
Causing nil to mild stress	
Working with computers	0.94±1.07
Talking to patients about personal problems'	0.71±0.94

DISCUSSION

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]

Personal and environmental events that cause stress are known as stressors[9,10]. Stressors of medical students are grouped into six categories.

Academic related stressors refer to any event related to the academics of the students. Interpersonal and intrapersonal related stressors refer to any form of relationships between and within individuals that cause stress. Teaching and learning related stressors refer to any events related to teaching or learning that causes stress. Social related stressors refer to any form of community and societal relationships that cause stress. Drive and desire related stressors refer to any form of internal or external forces that influence one's attitude, emotion, thought and behaviour which subsequently cause stress. Group activities related stressors refer to any group events and interactions that cause stress[13].

In present study moderate type of stress caused due all the 6 stressors was commonly seen in both genders of final year MBBS students. Statistically significant difference was seen in males and females with respect to academic related, teaching related and drive and desire related stressors. This difference was also noted in a study by Waghachavare et.al.[14]

Our study showed 58% of males and 64% of females perceiving moderate to high type of stress. This was higher as compared to studies conducted in Malaysia

which were 29.1 % to 41.9% in government institutes[2,5,6] and 46.2% in a private school[6], as measured by GHQ-12.In a study on medical student conducted in GS medical college, it was observed that 73% of students perceived stress[15]. Zung'sself rating scale for depression was used for the study. In the study by Waghachavareet.al.[14],which used DASS-21 and GAD scales, stress was perceived by 34 % of medical students. There was a significant difference between males and females perceiving stress.

The academic related stressor had 63% of population in the moderate type of stress, while it became 88% when moderate to severe type of stress added together. Academic related stressor was followed by intra and interpersonal related, teaching and learning related, social related, group related and drive and desire related stressors. The academic factor was higher stressor as compared to physical, emotional and social factors in the study conducted in GS medical college.

Studies have revealed that the stressors affecting medical students' well-being seem to be related to the medical training, especially academic matters[3, 6, 14-19].

On ranking the items depending upon the mean level of stress that the students perceived, it was found that the stress related to the academics was highest (Table 7). This finding supports the findings of the study done by Yusoff et al.[2]

CONCLUSION

The study showed high prevalence of stress among students with respect to different stressors. Academic stressors have significant association with stress among students. Females show more stress as compared to males. Strategies are required to decrease the burden of academic stress in the students.

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