

Original Research Article

Perceived Stress Among Undergraduate Medical Students at GMC-Srinagar, GMC-Baramulla, & GMC-Anantnag: A Cross-Sectional Study

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Abstract

Background: Stress in medical students worldwide has been shown to have consequences on health, academics, ability and social/personal behaviour. **Aim:** Aim of this cross-sectional study was to measure and compare stress levels among the male and female medical students of three government-run medical colleges in Kashmir. **Methods:** Data was collected from 264 students using a structured questionnaire through password-protected Google forms. The already validated and reliable Perceived Stress Scale was used to analyze the stress levels of the participants. **Statistical Analysis:** The R software package was used to analyse the data obtained. Categorical data was analyzed using the Pearson chi-square test. A P-value of less than 0.05 was considered to be statistically significant. **Results:** Results of the PSS Score analysis revealed that a majority of the students 145 (54.9%) had moderate stress, followed by 83 (31.4%) who had high stress, and 36 (13.6%) had low-stress levels. A higher proportion (39.09%) of the female students had a high PSS score as compared to 23.66% of the male students. A statistically significant association was found between the PSS Scale and Items 2, 6, and 8 of the PSS questionnaire as well as Life check events 2, 3, 4, 6, and 16 all having a p-value of <0.05. **Conclusion:** The results of our study confirm the findings of other similar studies. High levels of stress among medical students is a serious cause of concern. We also found that females have higher levels of perceived stress across colleges. Further investigation is needed on the exact methods and policies medical colleges need to employ to reduce stress among students.

Keywords: Perceived Stress, PSS Scale, Medical students, Life check events, Government Medical College (GMC)

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Introduction

Apprehension, discomfort and uneasiness result in anxiety in some individuals along with the possibility of a future threat, which is often accompanied by somatic signs which designate nervous system changes[1]. Globally, psychological disorders make up a large proportion of diseases and are recognised as the leading cause of years of life lived with a disability (Disability-Adjusted Life Years), resulting in decreased productivity and a negative impact on the quality of life of affected individuals and their families[2,3]. Various studies have reported significant distress with the prevalence of depressive and anxiety symptoms higher among medical students than in the general population[4,5]. After entering medical school, the personal and social life of students changes drastically; they face a new reality and challenges and have to respond to these conditions. Many students aren't able to properly adapt to these new circumstances. The lack of adaptation creates situations of variance that may prompt emotional disorders with a prevalence of depression and anxiety[1,6]. Prolonged stress might lead to grave consequences on health, academics, ability and social/personal behaviour[7]. More than 50% of medical students have reported problems due to stress[8-

10] and various studies have reported strong evidence to suggest that female medical students are more susceptible to stress, anxiety and psychological distress while at medical schools than male students[11,12]. However, this finding has not been replicated in some other studies[13]. It has been proposed that, with more females entering the profession, some of the pressures of studying and entering into a traditionally male-dominated field have been alleviated. This cross-sectional study aims to measure the perceived stress level and identify the potential stressors among the first-year medical students studying in three Government Medical Colleges located in Srinagar, Baramulla, and Anantnag (Jammu and Kashmir) as well as to examine the stress exhibited by male and female students, which has often been overlooked in previous research.

Materials and methods

Study setting, Design, and Sample size

This cross-sectional study was conducted among the first and second-year medical students in the age group of 18-25 years who had completed at least six months in their respective medical colleges and consented to participate. It was a multi-institutional study with medical students participating from GMC Srinagar, GMC Baramulla, and GMC Anantnag. The sample size of 210 was determined to obtain a confidence interval of 95% and a 5% margin of error. To compensate for non-response from the students and to ensure an adequate percentage response rate, an additional 10% was added that measured out to be 231. Students who did not complete the questionnaire form and those who refused were excluded from the

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study. A total of 264 students submitted the questionnaire from March 2021 to June 2021 after getting approval from the Institutional Ethical Committee, GMC Srinagar.

Study Tools & Data Collection

Stress levels were evaluated using the Perceived Stress Scale (PSS-10)-Cohen et al 1983, as recommended by the NIH Centers for Population Health and Health Disparities (CPHHD). The Perceived Stress Scale (PSS) is a globally used, brief, easy to administer tool that measures the degree to which situations in one's life are appraised as stressful. Three versions of PSS (PSS-14, PSS-10 and PSS-4) are available which comprise 14, 10 and 4 items respectively. The reliability of PSS is 0.85 (Cronbach's coefficient) with test-retest reliability during a short retest interval (several days) of 0.85.[14] The 10 item questionnaire asked about the thoughts and feelings of the participants observed during the last month and the frequency of the occurrence of the potential stressors was classified as (0) never, (1) almost never, (2) sometimes, (3) fairly often, and (4) very often. Perceived stress computation was done by reversing positive items' scores and then summing up all scores (as given by Cohen et al), which was stratified into Low Stress, Moderate Stress, and High Stress based on scores ranging from 0-13, 14-26, and 27-40 respectively. Another questionnaire of potential stressors, the responses of which were collected was the Life check events (LCE), wherein events were classified as (a) happened to the student, (b) witnessed it as happened to someone else, (c) learned about it, (d) exposed to it as part of the job, (e) not sure, or (f) did not apply.

Confidentiality of the responses as well as anonymity of participating students was ensured. The details of the participating students - the Life check events and Perceived stress score, as per structured/standard questionnaire were collected and stored in password-protected electronic format through Google Forms.

Statistical Analysis

The R software package was used to analyse the data obtained. Categorical data was analyzed using the Pearson chi-square test. A p-value of less than 0.05 was considered to be statistically significant.

Results

Among the students 264 who comprised the study, 117 (44.3%) were from GMC Baramulla, 84 (31.9%) were from GMC Srinagar, and 63 (23.8%) from GMC Anantnag, with almost equal participation from male 133 (50.37%) and female 131 (49.62%) students. Results of the PSS Score analysis revealed that a majority of the students 145 (54.9%) had moderate perceived stress, followed by 83 (31.4%) who had high perceived stress, and 36 (13.6%) had low perceived stress levels. Gender analysis of the PSS Scores revealed that a higher proportion (39.09%) of the female students had a high PSS score as compared to 23.66% of the male students. But a higher proportion of male students 79 (60.30%) had moderate stress levels in comparison to female students (66 - 49.62%). Similarly, low-stress levels were also higher in males 21(16.03%) as compared to females 15 (11.27%) (Figure 1).

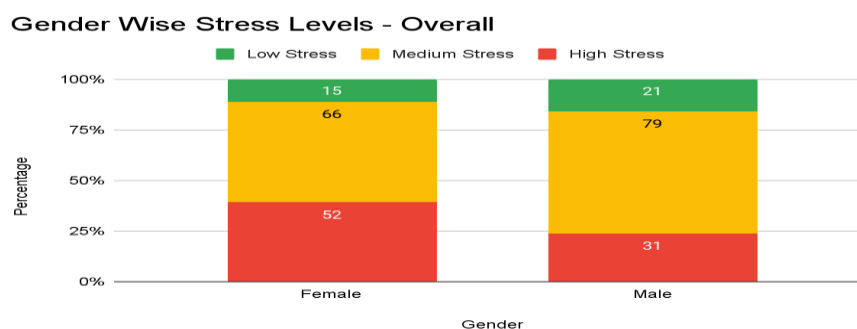


Fig 1: Gender Wise PSS Score Analysis

Data analysis also revealed that high stress was found in 45.46% of female students from GMC Srinagar, followed by 37.70% from GMC Baramulla, and 32.14% from GMC Anantnag. Similarly, a higher proportion of males from GMC Srinagar (30%) had high stress, which was followed by students from GMC Baramulla (25%), and GMC Anantnag (14.28%). Medium stress score analysis revealed that an almost equal proportion of male students from GMC Anantnag (62.86%) and GMC Baramulla (62.5%) had medium perceived stress, followed by 55% from GMC Srinagar. Medium stress was found in a higher proportion of female students from GMC Anantnag (57.14%), as compared to an almost equal proportion in GMC Srinagar (47.73%) and GMC Baramulla (47.54%). Analysis of low-stress scores showed that a higher proportion of females 9 (14.76%) was from GMC Baramulla, 3 (10.72%) was from GMC Anantnag and 3(6.81%) from GMC Srinagar. Result analysis of male students revealed that a higher proportion 8 (22.86%) was from GMC Anantnag, followed by 6 (15%) from GMC Srinagar and 7 (12.5%) from GMC-Baramulla (Table 1).

Table 1: College-Wise Gender Analysis of PSS Score

| College/Gender | High Stress | Medium Stress | Low Stress | Mean | Standard deviation | Total |
|----------------|-------------|---------------|------------|-------|--------------------|-------|
| GMC-Srinagar | | | | | | |
| Female | 20 | 21 | 3 | 24.32 | 6.35 | 44 |
| Male | 12 | 22 | 6 | 21.35 | 7.6 | 40 |
| GMC-Baramulla | | | | | | |
| Female | 23 | 29 | 9 | 21.79 | 7.33 | 61 |
| Male | 14 | 35 | 7 | 21.3 | 6.77 | 56 |
| GMC-Anantnag | | | | | | |
| Female | 9 | 16 | 3 | 22.04 | 6.35 | 28 |
| Male | 5 | 22 | 8 | 19.26 | 6.16 | 35 |
| Overall | | | | | | |
| Female | 52 | 66 | 15 | 22.74 | 6.88 | 133 |
| Male | 31 | 79 | 21 | 20.77 | 6.89 | 131 |

Students' responses to Perceived Stress Scale questionnaire (10 items)

A statistically significant association was found between the PSS score and Items 2, 6 & 8 of the PSS questionnaire as well as Life check events 2, 3, 4, and 6, all having a p-value of <0.05.

Results of the responses of the medical students revealed that 41.2% of male students and 25.6% of female students, felt sometimes, that they were unable to control important things in their lives, whereas 32.3% female students and 17.6% of male students, felt very often, that they were unable to control important things in their lives, and the same was found to be statistically significant. Similarly, 42.0% male students and 36.1% female students, felt sometimes that they could not cope with all the things they had to do, while 28.6% female students and 21.4% male students, felt, fairly often, that they could not cope with all the things they had to do. This was also found to be statistically significant. Similarly, 40.5% male students & 39.1% female students sometimes felt that they were on top of things, it was felt equally by both genders fairly often that they were on top of things. But 28.6% of female students & 16% of male students, very often felt that they were on top of things. Again, this was found to be statistically significant.

Responses of the medical students obtained clearly show a significant association of stress in these students with PSS Questionnaire Items 2, 6 and 8 having p-values of 0.013, 0.005, and 0.017 respectively (p-value of less than 0.05 was considered statistically significant). (Table 2,3).

In the last month, how often have you

Table 2: Item 1-5 of the PSS Questionnaire

| Item 1: ...been upset because of something that happened unexpectedly? | Response | Gender | |
|---|--------------|----------------|-------------|
| | | Female (n=133) | Male(n=131) |
| | Never | 9 (6.8) | 7 (5.3) |
| | Almost never | 12 (9.0) | 13 (9.9) |
| | Sometimes | 58 (43.6) | 73 (55.7) |
| | Fairly often | 26 (19.5) | 14 (10.7) |
| | Very often | 28 (21.1) | 24 (18.3) |
| Chi-Square = 5.9; P-Value = 0.207 | | | |
| Item 2: ...felt that you were unable to control the important things in your life? | Never | 16 (12.0) | 17 (13.0) |
| | Almost never | 18 (13.5) | 11 (8.4) |
| | Sometimes | 34 (25.6) | 54 (41.2) |
| | Fairly often | 22 (16.5) | 26 (19.8) |
| | Very often | 43 (32.3) | 23 (17.6) |
| Chi-Square = 12.6; P-Value = 0.013* | | | |
| Item 3: ...felt nervous and stressed? | Never | 1 (0.8) | 5 (3.8) |
| | Almost never | 8 (6.0) | 6 (4.6) |
| | Sometimes | 44 (33.1) | 48 (36.6) |
| | Fairly often | 30 (22.6) | 40 (30.5) |
| | Very often | 50 (37.6) | 32 (24.4) |
| Chi-Square = 8.4; P-Value = 0.075 | | | |
| Item 4: ...felt confident about your ability to handle your personal problems? | Never | 29 (21.8) | 29 (22.1) |
| | Almost never | 29 (21.8) | 37 (28.2) |
| | Sometimes | 53 (39.8) | 50 (38.2) |
| | Fairly often | 13 (9.8) | 12 (9.2) |
| | Very often | 9 (6.8) | 3 (2.3) |
| Chi-Square = 4.08; P-Value = 0.395 | | | |
| Item 5: ...felt that things were going your way? | Never | 9 (6.8) | 11 (8.4) |
| | Almost never | 26 (19.5) | 29 (22.1) |
| | Sometimes | 66 (49.6) | 58 (44.3) |
| | Fairly often | 23 (17.3) | 18 (13.7) |
| | Very often | 9 (6.8) | 15 (11.5) |
| Chi-Square = 2.9; P-Value = 0.562 | | | |

*p-value is significant

In the last month, how often have you

Table 3: Item 6-10 of the PSS Questionnaire

| Item 6: ...found that you could not cope with all the things that you had to do? | Response | Gender | |
|---|--------------|----------------|-------------|
| | | Female (n=133) | Male(n=131) |
| | Never | 7 (5.3) | 14 (10.7) |
| | Almost never | 9 (6.8) | 20 (15.3) |
| | Sometimes | 48 (36.1) | 55 (42.0) |
| | Fairly often | 38 (28.6) | 28 (21.4) |
| | Very often | 31 (23.3) | 14 (10.7) |
| Chi-Square = 14.9; P-Value = 0.005* | | | |
| Item 7: ...been able to control irritations in your life? | Never | 26 (19.5) | 22 (16.8) |
| | Almost never | 36 (27.1) | 44 (33.6) |
| | Sometimes | 49 (36.8) | 45 (34.4) |
| | Fairly often | 14 (10.5) | 19 (14.5) |
| | Very often | 8 (6.0) | 1 (0.8) |
| Chi-Square = 7.4; P-Value = 0.112 | | | |
| Item 8: ...felt that you were on top of things? | Never | 1 (0.8) | 6 (4.6) |
| | Almost never | 9 (6.8) | 19 (14.5) |
| | Sometimes | 52 (39.1) | 53 (40.5) |
| | Fairly often | 33 (24.8) | 32 (24.4) |
| | Very often | 38 (28.6) | 21 (16.0) |

| Chi-Square = 12.05; P-Value = 0.017* | | | |
|--|---------------------|-----------|-----------|
| Item 9: ...been angered because of things that happened that were outside of your control? | Never | 10 (7.5) | 11 (8.4) |
| | Almost never | 18 (13.5) | 20 (15.3) |
| | Sometimes | 54 (40.6) | 53 (40.5) |
| | Fairly often | 29 (21.8) | 30 (22.9) |
| | Very often | 22 (16.5) | 17 (13.0) |
| Chi-Square = 0.80; P-Value = 0.938 | | | |
| Item 10: felt difficulties were piling up so high that you could not overcome them? | Never | 14 (10.5) | 16 (12.2) |
| | Almost never | 18 (13.5) | 19 (14.5) |
| | Sometimes | 43 (32.3) | 43 (32.8) |
| | Fairly often | 29 (21.8) | 30 (22.9) |
| | Very often | 29 (21.8) | 23 (17.6) |
| Chi-Square = 0.85; P-Value = 0.931 | | | |

* p-value = significant

Student's responses to Life events checklist

Statistical significance was found with the events: 2,3,4, 6, and 16 having p-values of 0.023, 0.009, 0.040, <0.0001, and 0.034 respectively (Table 4-7). Event 2 (Fire or explosion) was reported as witnessed happening to someone else by 21.1% female students and 28.2% of the male students. 24.4% and 17.3% of male and female students respectively witnessed transportation accidents (Event 3) happen to someone else. Being involved in a transportation accident (16% males vs 4.5% females) was found to be statistically significant. Event 4 related to a serious accident at work or home and 14.5% of male and 9.8% of female students reported that the event happened to a close relative or friend, whereas 13.7% and 6% of male & female students respectively witnessed the event happen to someone else. Event 6 of physical assault was reported by 26% of male students and 6.8% of female students as happening to them, whereas 15.3% and 10.5% of male and female students respectively witnessed the event happening to someone else.

Table 4: Events 1-5

| Gender | Event 1: Natural disaster (For example flood, hurricane, tornado, earthquake) | | | | | |
|--------------------------------------|---|-----------|-----------|---------|-----------|-----------|
| | a | b | c | d | e | f |
| Females (133) | 76 (57.1) | 13 (9.8) | 6 (4.5) | 1 (0.8) | 12 (9.0) | 25 (18.8) |
| Males (131) | 56 (42.7) | 17 (13.0) | 9 (6.9) | 0 (0.0) | 22 (16.8) | 27 (20.6) |
| Chi-Square = 8.1; P-Value = 0.147 | | | | | | |
| Gender | Event 2: Fire or explosion | | | | | |
| | a | b | c | d | e | f |
| Females (133) | 4 (3.0) | 28 (21.1) | 14 (10.5) | -- | 13 (9.8) | 74 (55.6) |
| Males (131) | 14 (10.7) | 37 (28.2) | 13 (9.9) | -- | 16 (12.2) | 51 (38.9) |
| Chi-Square = 11.36; P-Value = 0.023* | | | | | | |
| Gender | Event 3: Transportation accident (for example, car accident, boat accident, train wreck, plane crash) | | | | | |
| | a | b | c | d | e | f |
| Females (133) | 6 (4.5) | 23 (17.3) | 28 (21.1) | 1 (0.8) | 14 (10.5) | 61 (45.9) |
| Males (131) | 21 (16.0) | 32 (24.4) | 19 (14.5) | 0 (0.0) | 15 (11.5) | 44 (33.6) |
| Chi-Square = 15.30; P-Value = 0.009* | | | | | | |
| Gender | Event 4: Serious accident at work, home, or during recreational activity | | | | | |
| | a | b | c | d | e | f |
| Females (133) | 2 (1.5) | 8 (6.0) | 13 (9.8) | -- | 27 (20.3) | 83 (62.4) |
| Males (131) | 6 (4.6) | 18 (13.7) | 19 (14.5) | -- | 26 (19.8) | 62 (47.3) |
| Chi-Square = 10.01; P-Value = 0.040* | | | | | | |
| Gender | Event 5: Exposure to toxic substances (for example, dangerous chemicals, radiation) | | | | | |
| | a | b | c | d | e | f |
| Females (133) | 5 (3.8) | 3 (2.3) | 2 (1.5) | 0 (0.0) | 26 (19.5) | 97 (72.9) |
| Males (131) | 2 (1.5) | 6 (4.6) | 6 (4.6) | 3 (2.3) | 31 (23.7) | 83 (63.4) |
| Chi-Square = 8.79; P-Value = 0.117 | | | | | | |

*p-value is significant

Table 5: Events 6-10

| Gender | Event 6: Physical assault (for example, being attacked, hit, slapped, kicked, beaten up) | | | | | |
|--|---|-----------|---------|-----------|-----------|------------|
| | a | b | c | d | e | f |
| Females (133) | 9 (6.8) | 14 (10.5) | 5 (3.8) | 17 (12.8) | 88 (66.2) | -- |
| Males (131) | 34 (26.0) | 20 (15.3) | 5 (3.8) | 16 (12.2) | 56 (42.7) | -- |
| Chi-Square = 22.72; P-Value = <0.0001* | | | | | | |
| Gender | Event 7: Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb) | | | | | |
| | a | b | c | d | e | f |
| Females | 1 (0.8) | 2 (1.5) | 6 (4.5) | -- | 11 (8.3) | 113 (85.0) |

| | | | | | | |
|------------------------------------|--|---------|----------|-----------|------------|------------|
| (133) | | | | | | |
| Males (131) | 0 (0.0) | 8 (6.1) | 10 (7.6) | -- | 18 (13.7) | 95 (72.5) |
| Chi-Square = 8.83; P-Value = 0.065 | | | | | | |
| Gender | Event 8: Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm) | | | | | |
| | a | b | c | d | e | f |
| Females (133) | 3 (2.3) | 3 (2.3) | 3 (2.3) | 10 (7.5) | 114 (85.7) | -- |
| Males (131) | 3 (2.3) | 4 (3.1) | 5 (3.8) | 11 (8.4) | 108 (82.4) | -- |
| Chi-Square = 0.83; P-Value = 0.933 | | | | | | |
| Gender | Event 9: Other unwanted or uncomfortable sexual experience | | | | | |
| | a | b | c | d | e | f |
| Females (133) | 8 (6.0) | 2 (1.5) | 3 (2.3) | -- | 9 (6.8) | 111 (83.5) |
| Males (131) | 5 (3.8) | 2 (1.5) | 3 (2.3) | -- | 24 (18.3) | 97 (74.0) |
| Chi-Square = 8.43; P-Value = 0.077 | | | | | | |
| Gender | Event 10: Combat or exposure to a warzone (in the military or as a civilian) | | | | | |
| | a | b | c | d | e | f |
| Females (133) | 19 (14.3) | 9 (6.8) | 7 (5.3) | 11 (8.3) | -- | 87 (65.4) |
| Males (131) | 26 (19.8) | 10 | 7 (5.3) | 20 (15.3) | -- | 68 (51.9) |
| Chi-Square = 6.06; P-Value = 0.194 | | | | | | |

*p-value is significant

Table 6: Events 11-15

| | | | | | | |
|------------------------------------|---|-----------|-----------|---------|-----------|------------|
| Gender | Event 11: Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war) | | | | | |
| | a | b | c | d | e | f |
| Females (133) | 0 (0.0) | 4 (3.0) | 8 (6.0) | 0 (0.0) | 7 (5.3) | 114 (85.7) |
| Males (131) | 1 (0.8) | 6 (4.6) | 6 (4.6) | 1 (0.8) | 15 (11.5) | 102 (77.9) |
| Chi-Square = 6.24; P-Value = 0.283 | | | | | | |
| Gender | Event 12: Life-threatening illness or injury | | | | | |
| | a | b | c | d | e | f |
| Females (133) | 7 (5.3) | 24 (18.0) | 25 (18.8) | 0 (0.0) | 7 (5.3) | 70 (52.6) |
| Males (131) | 10 (7.6) | 23 (17.6) | 19 (14.5) | 1 (0.8) | 12 (9.2) | 66 (50.4) |
| Chi-Square = 3.78; P-Value = 0.580 | | | | | | |
| Gender | Event 13: Severe human suffering | | | | | |
| | a | b | c | d | e | f |
| Females (133) | 11 (8.3) | 21 (15.8) | 13 (9.8) | 0 (0.0) | 22 (16.5) | 66 (49.6) |
| Males (131) | 14 (10.7) | 23 (17.6) | 21 (16.0) | 2 (1.5) | 25 (19.1) | 46 (35.1) |
| Chi-Square = 8.08; P-Value = 0.152 | | | | | | |
| Gender | Event 14: Sudden violent death (for example, homicide, suicide) | | | | | |
| | a | b | c | d | e | f |
| Females (133) | 4 (3.0) | 22 (16.5) | 15 (11.3) | -- | 15 (11.3) | 77 (57.9) |
| Males (131) | 0 (0.0) | 27 (20.6) | 16 (12.2) | -- | 18 (13.7) | 70 (53.4) |
| Chi-Square = 5.13; P-Value = 0.274 | | | | | | |
| Gender | Event 15: Sudden accidental death | | | | | |
| | a | b | c | d | e | f |
| Females (133) | 6 (4.5) | 24 (18.0) | 30 (22.6) | 0 (0.0) | 14 (10.5) | 59 (44.4) |
| Males (131) | 3 (2.3) | 34 (26.0) | 21 (16.0) | 1 (0.8) | 14 (10.7) | 58 (44.3) |
| Chi-Square = 5.30; P-Value = 0.380 | | | | | | |

Table 7: Events 16-17

| | | | | | | |
|--------------------------------------|---|---------|---------|----|-----------|-------------|
| Gender | Event 16: Serious injury, harm, or death you caused to someone else | | | | | |
| | a | b | c | d | e | f |
| Females (133) | 4 (3.0) | 4 (3.0) | 1 (0.8) | -- | 8 (6.0) | 116 (87.20) |
| Males (131) | 2 (1.5) | 7 (5.3) | 6 (4.6) | -- | 18 (13.7) | 98 (74.8) |
| Chi-Square = 10.40; P-Value = 0.034* | | | | | | |
| Gender | Event 17: Any other very stressful event or experience | | | | | |

| | a | B | c | d | e | f |
|----------------------|------------------|-----------------|-----------------|-----------------|-------------------|------------------|
| Females (133) | 55 (41.4) | 2 (1.5) | 7 (5.3) | 1 (0.80) | 25 (18.80) | 43 (32.3) |
| Males (131) | 50 (38.2) | 10 (7.6) | 10 (7.6) | 0 (0.0) | 23 (17.6) | 38 (29.0) |

Chi-Square = 7.47; P-Value = 0.187

*p-value is significant

Discussion

Going to college is accompanied by major transitions and challenges for all students. Previous research has shown that students are particularly vulnerable to psychological distress while studying at medical colleges. Some of the reasons are that medical students are faced with additional stressors such as being in a very competitive environment, interacting with and providing for patients, and performing practical lab work which has the potential to cause serious harm if performed incorrectly[15]. In light of this, it is no wonder that when asked, medical students rate their time in medical schools as stressful, with examinations, heavy workload and fear of failing, commonly cited as reasons for their stress[1,5]. The consequences of prolonged stress on medical students are widespread; decreased academic achievement, substance abuse, and detrimental effects on physical and mental health. Identification of these modifiable stressors as well as timely intervention may result in a less stressful academic and social life. Being less stressed can enhance the performance of students as well as their success as medical professionals. Various studies have reported the prevalence of stress among medical students in Indian medical colleges[7,16,17]. The present study comprised 264 1st and 2nd-year medical students studying in three government-run medical colleges located in Srinagar, Baramulla, Anantnag, with almost equal participation from female 133 (50.37%) and male 131 (49.62%) students. While analyzing the PSS score we found that a majority (54.9%) of students had moderate stress and that a higher proportion of females (39.09%) had a high PSS score as compared to male students (23.66%). Conversely, the proportion of low-stress students was higher in male students (16.03%) as compared to female students (11.26%). Various other studies conducted earlier found similar results of increased perceived stress in females when compared with males. In 2009 Abdulghani HM et al in one of his findings reported the proportion of female students having stress was higher (75.7%) than male students (57%)[18]. In another study, Eva EO et al (2015) reported that 55% of females were suffering from stress as compared to 53% of males[19]. Shelke U et al (2014), Surwase K et al (2016); Melaku L et al (2015); Kiran Krishnappa et al (2018) have also found similar results of increased perceived stress in females as compared to males [7,20-22]. Whereas, a study done on Malaysian medical students found that the stressors were more commonly seen among male students (Johari et al 2009)[23]. Saxena Y et al in their study also reported that males exhibit higher levels of perceived stress than females[16]. An analysis of the life check events responses of the students revealed that traumatic events including fire or an explosion, a transportation accident, a serious accident at work or home, physical assault, and serious injury or harm caused to someone else were associated with higher levels of stress among students. Our cross-sectional study was multi-institutional and was carried out among the first & second-year medical students of GMC Srinagar, GMC Baramulla, and GMC Anantnag. GMC Srinagar is one of the premier and oldest medical colleges, centrally located, with state of the art infrastructure and student/patient care facilities whereas the two other medical colleges i.e GMC Baramulla and GMC Anantnag are newly established and are located at a distance of approximately 53 km and 72 km from GMC Srinagar respectively. Data analysis showed that students from GMC Srinagar (45.46% of females and 30% of males) are more stressed than students from GMC Baramulla (37.7% of females and 25% of males) and GMC Anantnag (32.14% of females and 14.28% of males). Conversely, GMC Anantnag had the highest proportion of low-stress students (10.71% of females and 22.86% of males), followed by GMC Baramulla (14.75% of females and 12.5% of males), and GMC Srinagar (16.81% of females and 15% of males). This trend indicates that students studying in GMC Srinagar are more stressed than its newly established sister institutions. This might be

because the colleges in Baramulla and Anantnag are recently established and have no senior batches. This results in less peer pressure and a slightly less competitive environment than GMC Srinagar. More investigation is needed to determine the reason behind this trend.

Conclusion

The results of our study confirm the findings of other similar studies. High levels of stress, especially among female students, are a serious cause of concern. Factors that contribute to the development of stress in varied situations, either directly or indirectly, need to be identified early and managed properly. Early identification and possible necessary interventions will result in a less stressful academic and social life which in turn would lessen the negative effects of stress in future thereby enhancing their academic performance and skill development as medical graduates which would be beneficial to the community as well as the society at large.

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