

Original Article

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Stress Among 1st year Medical Students in Bangladesh

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Abstract:

Background: The MBBS course is a long and stressful course throughout the world for undergraduate medical students. There is a growing concern about stress among medical students and its effects. Although each year of medical students is characterized by unique stress, the students in their first year are more prone to stressful situations. The reasons include academic pressure, unrealistic expectations and unfamiliarity in a new environment. These stresses are badly affecting their physical and mental health, which also affects their academic performance.

Methods: This was a cross-sectional study over four weeks in the year 2022, conducted at different medical colleges in Sylhet. The sample size was 286 first-year MBBS students in different medical colleges. The sampling technique was a non-probability convenient type. Data were collected by using the pretested Medical Students Stressor Questionnaire (MSSQ) and examined using SPSS, version 22.

Results: A total of 286 medical students were recruited, with age range of 19-21 years; among them, 90 were male and 196 were female. The maximum number of students found to have moderate stress (185, 64.7%) followed by much stress (80, 28.0%). There were few students with no stress (0.3%), extreme stress (1.0%), and mild stress (5.9%) found in this study. The unpaired t-test showed significantly higher ($p = <0.001$) stress among females (3.82 ± 0.49) than males (3.52 ± 0.49).

Conclusion: It can be concluded that the vast majority of students experienced moderate stress, and analysis highlighted a greater association with academic factors. So, the purpose of our study is to design a proper curriculum for our students where mental health will be given priority.

Key words: stress, medical students, MSSQ, academic performance.

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Introduction:

The term stress was first employed in the 1930s by endocrinologist Hans Selye, who published a model of stress¹. Stress in humans results from interactions between persons and their environment that are perceived as straining or exceeding their adaptive capacities or threatening their well-being².

Medical students undergo tremendous stress during various stages of the MBBS course. Stress among medical students is common and process oriented.³ The students of medical college in Bangladesh, are from different districts of Bangladesh and from other countries. These students come from different cultural, socioeconomic, and educational backgrounds. All these students are exposed to a new learning environment, making new social circles, and also adapting to a different world.⁴ First year medical students most often enter college fresh from high school. They get exposed to a huge syllabus after their 12th standard for the first time. Many of the students are from Bangla medium, so they find it difficult to understand English language teaching in the medical institution.⁵ In first-year medical students, stress includes financial problems, health problems, social issues or academic difficulties, information and input overload and lack of leisure time. Stress sometimes favorable and can facilitate learning. It can also inhabit and suppress learning.⁶ When education is seen as a

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threat by the student, stress can elicit feelings of helplessness which leads to poor performance and emotional distress and may lead to serious social consequences in subsequent years.⁷ Stress has been found to be associated with anxiety and depression, interpersonal conflict, sleep problems, lower academic and clinical performance. It can also decrease attention, concentration, and hamper decision-making. It was linked to medical students medical school dropout, suicide, abuse of drug and alcohol.⁸ Therefore, early detection is necessary to minimize the ill effects of distress on such students. So, the purpose of this study is to find out prevalence of stress among first-year medical students in Bangladesh.

Materials and Methods: This cross-sectional study was conducted in the Department of Anatomy, Sylhet Women's Medical College, Sylhet, Bangladesh. All the first year MBBS students who studied for at least one year in different Medical Colleges in the Sylhet division were the target population. A standard questionnaire was used to collect the data through a face to face interview method. Demographic data includes name, sex, age, and marital status, living status (hosteller or non-hosteller). Stress was measured using 27-items Medical Students Stressor Questionnaire (MSSQ). Each participants rates each item of the MSSQ by choosing from five responses – strongly disagree, disagree, neither disagree nor agree, agree and strongly agree. The student's stress was graded into four categories: (1) no stress, (2) mild stress, (3) moderate stress, (4) much stress and (5) extreme stress, according to the Likert scoring system. A window based statistical package for social science (SPSS, version 22) was used to analyze the data. One sample Chi-Squared test was used to analyze the distribution of response given by the students to every question. The distribution of response given based on the participant's gender was compared using Fisher's Exact test. The mean value difference between the male and female gender was compared using an unpaired t-test. A p-value of <0.05 was considered statistically significant in every inferential statistic. The study was approved by the ethical committee of Sylhet Women's Medical College, Sylhet.

Written informed consent was obtained from the participants before the start of the study.

Results:

There were a total of 286 Bangladeshi 1st year MBBS Students from three different Medical Colleges enrolled solemnly in this study; foreign students were excluded. Out of 286 participants, 90 (31.5%) were male and 196 (68.5%) were female. There were 131 (45.8%) students joined from the North East Medical College, 94 (32.9%) from the Sylhet MAG Osmani Medical College and 61 (21.3%) from the Sylhet Women's Medical College in this study; most of them (71.3%) were living in hostel (Table 1).

Table 1: Demographic details of the participants (n=286)

Age		19-21y	n	%
sex	Male		90	31.47
	Female		196	68.53
Staying in hostel	Hosteller (71.3%)	male	67	23.43
		female	137	47.9
	Non hosteller (28.7%)	male	17	5.94
		Female	65	22.7

The students response did not follow the normal distribution ($p = <0.001$) in most of the questions except for question 18 ($p = 0.124$). In most of the cases, more students either agreed or strongly agreed with the problems (Table 2). A high degree of stress was found in the vast syllabus -181(63.3%), covering topics very fast-132(46.2%), 1year portions being covered within 9-10 months -117(40.9%), difficulty covering portions daily-114(39.9%), increased work load towards exam-179(62.2%), more self study needed-159(55.6%), less time for repeated learning -148(51.7%), lack of time management skills -121(42.3%), even after trying best not getting expected marks -96(33.6%), overlapping of short examinations and seminars by different departments -123(43.3%), not getting enough time for drawing and writing records after completion daily studies -114(39.9%),not being given proper idea about how to do dissection especially on first day-83(29%), difficult to follow Cunningham's manual inside dissection hall-83(29%), tired filling after the tight

schedule from 8am to 2pm -159(55.6%), problems in memorising topics -105(36.7%), fear of becoming additional or batch out or repeater -113(39.5%). Moderate degree of stress was found in tough topics -107(37.4%), not being given appropriate marks in sessional examination -76(26.6%), fear of late mark

during record correction -87(37.4%), dissection table teaching is inadequate -88(30.8%), required to be more responsible -123(43%), No stress was found in continuous 2hours dissection without break -67(23.4%), fear of ragging and harassment -82(28.7%), and failure of first term final examination -106(37.1%).

Table 2: Distribution of student's response on the questionnaire.

Sl. no.	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	No response	p-value
1	Vast syllabus	6 (2.1%)	9 (3.1%)	19 (6.6%)	67 (23.4%)	181 (63.3%)	4 (1.4%)	<0.001
2	Tough topics	7 (2.4%)	17 (5.9%)	60 (21.0%)	107 (37.4%)	91 (31.8%)	4 (1.4%)	<0.001
3	Covering topics very fast	15 (5.2%)	27 (9.4%)	43 (15.0%)	67 (23.4%)	132 (46.2%)	2 (0.7%)	<0.001
4	One year portion being covered within 9-10 months	23 (8.0%)	23 (8.0%)	51 (17.8%)	64 (22.4%)	117 (40.9%)	8 (2.8%)	<0.001
5	Difficulty in covering portions daily	10 (3.5%)	16 (5.6%)	40 (14.0%)	99 (34.6%)	114 (39.9%)	7 (2.4%)	<0.001
6	Increased workload towards exams	8 (2.8%)	9 (3.1%)	16 (5.6%)	66 (23.1%)	179 (62.6%)	8 (2.8%)	<0.001
7	More self-study needed	5 (1.7%)	10 (3.5%)	27 (9.4%)	80 (28.0%)	159 (55.6%)	5 (1.7%)	<0.001
8	Less time for repeated learning	4 (1.4%)	12 (4.2%)	27 (9.4%)	88 (30.8%)	148 (51.7%)	7 (2.4%)	<0.001
9	Lack of time management skills	8 (2.8%)	14 (4.9%)	52 (18.2%)	82 (28.7%)	121 (42.3%)	9 (3.1%)	<0.001
10	Not being given appropriate marks in sessional examination	18 (6.3%)	43 (15.0%)	70 (24.5%)	76 (26.6%)	71 (24.8%)	8 (2.8%)	<0.001
11	Even after trying best, not getting expected marks	16 (5.6%)	37 (12.9%)	37 (12.9%)	91 (31.8%)	96 (33.6%)	9 (3.1%)	<0.001
12	Overlapping of short examinations and seminars by different departments	12 (4.2%)	21 (7.3%)	53 (18.5%)	71 (24.8%)	123 (43.0%)	6 (2.1%)	<0.001
13	Students are supposed to be ready with all the topics and anyone can be asked to present the topics for seminar	24 (8.4%)	35 (12.2%)	103 (36.0%)	71 (24.8%)	41 (14.3%)	12 (4.2%)	<0.001
14	Not getting enough time for drawing and writing records after completing daily studies	8 (2.8%)	12 (4.2%)	36 (12.6%)	111 (38.8%)	114 (39.9%)	5 (1.7%)	<0.001
15	Fear of 'late' mark during record correction	11 (3.8%)	21 (7.3%)	83 (29.0%)	87 (30.4%)	59 (20.6%)	25 (8.7%)	<0.001
16	Not being given proper idea about how to do dissection especially on first day	25 (8.7%)	42 (14.7%)	61 (21.3%)	71 (24.8%)	83 (29.0%)	4 (1.4%)	<0.001
17	Difficult to follow Cunningham's Manual inside dissection hall	12 (4.2%)	29 (10.1%)	71 (24.8%)	69 (24.1%)	83 (29.0%)	22 (7.7%)	<0.001
18	Continuous two hours dissection without break	57 (19.9%)	67 (23.4%)	52 (18.2%)	40 (14.0%)	59 (20.6%)	11 (3.8%)	0.124
19	Not allowing other text books without except Cunningham's Manual inside dissection hall	59 (20.6%)	72 (25.2%)	83 (29.0%)	30 (10.5%)	32 (11.2%)	10 (3.5%)	<0.001
20	Dissection table teaching is inadequate	32 (11.2%)	37 (12.9%)	47 (16.4%)	88 (30.8%)	74 (25.9%)	8 (2.8%)	<0.001
21	Tired feeling after the tight schedule from 8am to 2pm	7 (2.4%)	11 (3.8%)	30 (10.5%)	75 (26.2%)	159 (55.6%)	4 (1.4%)	<0.001
22	Problems in memorizing topics	11 (3.8%)	16 (5.6%)	47 (16.4%)	103 (36.0%)	105 (36.7%)	4 (1.4%)	<0.001
23	Procrastination (habit of post-poning routine work)	17 (5.9%)	26 (9.1%)	72 (25.2%)	78 (27.3%)	82 (28.7%)	11 (3.8%)	<0.001
24	Fear of ragging and harassment	82 (28.7%)	52 (18.2%)	60 (21.0%)	47 (16.4%)	43 (15.0%)	2 (0.7%)	0.001
25	Required to more responsible	8 (2.8%)	12 (4.2%)	45 (15.7%)	123 (43.0%)	90 (31.5%)	8 (2.8%)	<0.001
26	Failure of first term final examination	106 (37.1%)	43 (15.0%)	46 (16.1%)	51 (17.8%)	35 (12.2%)	5 (1.7%)	<0.001
27	Fear of becoming additional or batch out or repeater	24 (8.4%)	37 (12.9%)	52 (18.2%)	54 (18.9%)	113 (39.5%)	6 (2.1%)	<0.001

The maximum number of students found to have moderate stress (185, 64.7%) followed by much stress (80, 28.0%). There were few students with no stress (0.3%), extreme stress (1.0%) and mild stress (5.9%) found in this study (Figure 1). A significant difference ($p = 0.001$) was observed in distribution of different grade of stress based on the gender of the participant. The differences were found to be prominent among the participants who had moderate (75.6% of male and 59.7% of female) and much stress (14.4% of male and 34.2% of female) in this study (Table 3 / Figure 2). The mean score of stress was found to be significantly higher ($p = <0.001$) among female (3.82 ± 0.49) than male (3.52 ± 0.49) (Figure 3).

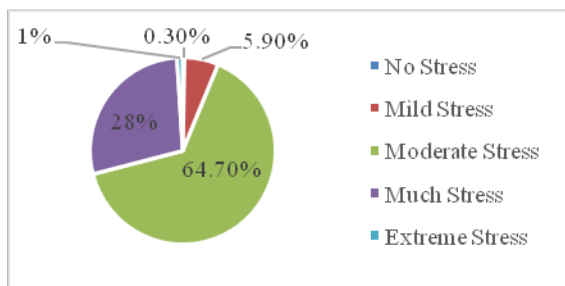


Figure 1: Frequency of different grade of stress.

Table 3: Distribution of different grades of stress according to the gender.

Stress grade	Male	Female	Total
No stress	1 (1.1%)	0	1 (0.3%)
Mild stress	8 (8.9%)	9 (4.6%)	17 (5.9%)
Moderate stress	68 (75.6%)	117 (59.7%)	185 (64.7%)
Much stress	13 (14.4%)	67 (34.2%)	80 (28.0%)
Extreme stress	0	3 (1.5%)	3 (1.0%)
Total	90 (100%)	196 (100%)	286 (100%)

Fisher's Exact test: 0.001

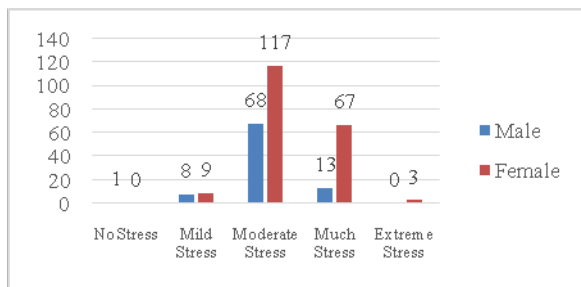


Figure 2: Number of student had different grades of stress based on their gender.

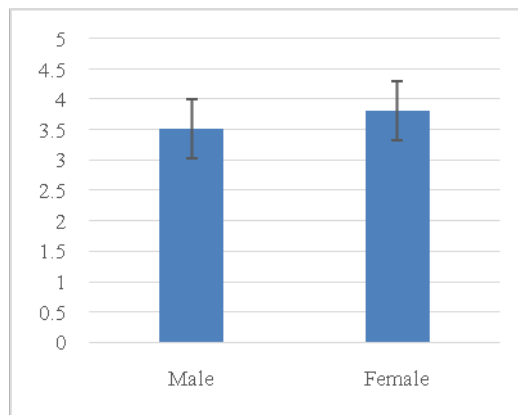


Figure 3: Mean score of stress difference between male and female gender.

Discussion: Today the concern about stress among undergraduate medical students has increased. Excessive stress can have a severe impact on students' academic performance as well as their mental and physical health. The present study aimed to investigate, the level of stress felt by medical students during their study period. In our study we found that female students feel more stressed than male students, and it was statistically significant. The probable reasons for the higher degree of stress in medical students in this study are vast syllabus, increase workload towards exam, more self-study needed, less time for repeated learning. In our country similar study done by Eva.et.al, they indicated that out of 990 medical students, the overall prevalence of stress is higher in female (55%) than male (45%). They also reported that more than half of Bangladeshi medical students are suffering from measurable academic stress.⁹ Similar studies from Kerala done by Raj R Ret.al & Maharashtra done by Mokalet.al, found high degree of stress was academic stressor; difficulty in understanding the content, heavy workload, large amount of content, and lack of time to revise the topics, they also found academic stress was significantly higher in females compared to males.^{10,5} The study done by Inam Bazmi from Saudi Arabia, reported that female medical students are more at risk of suffering the effects of stress than males.¹¹ Saipanish reported that 61.4% students in a Thai medical school had experienced academic stress as measured by Thai stress tests.¹² A study done by Ranade et.al. from Government Medical college, Maharashtra.

They found 85% first year medical students had stress.¹³ Our observation is dissimilar to that of Cohen S et al, where there was no significant difference in stress between male and female students.¹⁴ Most of the researchers noticed that frequent examinations are a common source of stress for medical students.^{4,14,15} This study faced a few limitations first, its population size was small. Second, we didn't mention any coping strategies in this study. Therefore, it was suggested that further studies with large sample population should be conducted to increase the generalizability of the result.

Conclusion: Medical students are highly susceptible to great academic stress. It may affect their mental capability for good academic performance. The present study showed the majority of students have suffered moderate level of stress, and it was significantly higher in female participants than male participants. Therefore, it is essential to review the curriculum and also provide mental health services. We know that it is not possible to completely eliminate stress in the medical education system. But we can bring this stress to a bearable level by providing proper counseling to medical students, and we can also make revisions to our current curriculum.

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