



Gender Correlation of Stress in MBBS Students in Relation to Covid 19 Pandemic

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Article History	Abstract
Received: 06 August 2023 Revised: 05 Sept 2023 Accepted: 14 Nov 2023	Objective: Since December 2019, the COVID-19 pandemic has posed a substantial threat with its associated high mortality, infection, and risk of psychological stress. A large number of students were affected because of a prolonged break from academic activities and staying at home. The focus of this study is to understand the stress levels of M.B.B.S. students, any psychological imbalances, and their major hurdles during the COVID-19 lockdown. Methods: The study was designed to determine the prevalence of stress levels in 150 medical students to explore the sources of stress, 64 were male students and 86 were female students & it 's relationship across the male and female students. Demographic information and Qualitative data from investigator tailored Medical Student Stress Questionnaire (MSSQ) by self-rating under supervision of investigators were subjected to analysis. Results: We observed that medical students were generally stressed during lockdown and the pandemic. Stress perceived was more in males' students 49/64(76.5%) as compared to females 51/86(59.3%) and their MSSQ index score was significantly different. Moderate to high academic stress was present among 79% of students more so in males with the academic domain score significantly different from that of females. Females perceived more stress in inter personal domain (12.7%) with the score significantly different from males. Group and Teaching stress was equally present in males and females. Conclusion: During the pandemic, students' mental health needs to be continually monitored as they are stressed owing to fear as well as about their studies and future careers.
CC License CC-BY-NC-SA 4.0	Keywords: Covid-19, Students, Gender

1. Introduction

The novel coronavirus (that causes COVID-19) has for many months been a global phenomenon. With its rapid spread rate, it has caused major disruptions to the livelihoods of people worldwide. [1,2] All this has put people under tremendous psychological pressure.[3] Specifically, isolation, engaging in online classes, frequent network failure, and peer and parental pressure have added to students' perceived stress. As expected, the pandemic has influenced the psychological health of students worldwide.[4] Therefore, a sufficient number of Indian students enrolled in medical education may be a victim of such distress.

Medical courses in India are very demanding for students which involves emotional aspect as well, sometimes making career in medical education is very stressful [1,5]. Studies have proved that compared to general population medical students are more stressed of the students [2,6] and has led to suicide and suicidal attempts by them [3]. The stress stems from fear of failure, academic pressure, perfectionist standards, enormous content that has to be mastered in small time frame, higher

expectation from parents & peers, and exhaustive work schedules in addition to the frequent assessment and examination [4] & compulsion for educational program that may not be their first choice [5].

Stress has been shown to manifest somatic, visceral & emotional symptoms which negatively affect their academic performance [6]. Elevated corticosteroid levels during stress can impair declarative memory, concentration, and learning [7].

Many countries have encouraged medical students to collaborate with national health workers in this prevailing situation. These medical students are under high pressure and stress because of direct contact with infected people.[8] Because of fear, stress, and anxiety added by COVID-19 infection, students are at high risk of experiencing psychological issues.⁹ A study by Odriozola P. et al. (2020) confirmed the stress and other severe psychological distress due to the COVID-19 outbreak among students and workers in Spanish universities.¹⁰ However, no significant study has highlighted the mental health of Indian students during the current pandemic.

Common individual behavioural effects like anxiety, stress, depression, anger, and post-traumatic stress are socially available disorders affecting people globally. Additional attributes concerning students like substance abuse, violation of guidelines, peer pressure, and technical glitches during self-learning activities also affect their psychological behaviour. Thus, the focus of this study was to determine the prevalence of stress in medical students to explore sources of stress and its relationship across male and female students and to bridge the gap between understanding students' stress parameters when academic activities are limited and they are left in isolation.

2. Materials And Methods

The study was conducted at Department of Physiology & Microbiology, NCRIMS, Meerut. After getting clearance from Institutional ethical committee MBBS students (n=150) 64 males and 86 females of NCRIMS were invited to participate in the study. Following informed and written consent the volunteers were asked to self-rate the tailored Medical Student Stress Questionnaire. Data collection was done in February in middle of academic term.

To investigate the sources of stress the questionnaire was tailored from the medical student stress Questionnaire (MSSQ) [13] which consisted of a set of 40 questions on several domains of stress perceived by them. All the 40 questions had 5 responses on Likert scale and the sum of responses of domain were normalized and scaled as mild (0-1), moderate (1.01-2); high (2.01-3) & severe (3.01-4).

The questions were addressed to six domains of stress which included, Academic related: involving examination, learning context, competition, falling behind in schedule etc; Intrapersonal & interpersonal: verbal/physical abuse, conflicts with peers and teachers, health problems etc; teaching related: inadequate study material, lack of guidance, teaching skills, feedback from teachers etc; Social related: interruption by peers, lack of time for friends and families; Drive related: parental wish, unwillingness; Group activities related: peer pressure, performance and discussion. Demographic information (age, gender) was obtained within the same questionnaire. Identities of the volunteers were kept hidden by randomly allocating IDs to recruiting volunteers. They were allowed to fill the questionnaire, seal the envelopes and drop it in a drop box. The data was analysed according to levels of stress in all six domains according to the gender.

3. Results and Discussion

None of the students experienced severe level stress in any of the domain. Academic stress was moderate to high in 79% of the students more so in males (35.9%) as compared to females (16.27%). Several of them reported increased work load due to huge course content squeezed in less than 1 year as most important of the cause.

Moderate to high Inter personal and intrapersonal stress was reported in 40% of the students with females showing high stress (12.7%) due to interpersonal relationship as compared to males (7.81%).

40% of students had Moderate to high Teaching stress because of the examinations, seminars and tutorials with almost equal in proportion among males & females (9.37% vs 11.62%). Social factors were causing moderate stress in 23.43% of males as compared to 29.06% in females. 26% of students never felt lack of drive because of stress.

Moderate to high Group stress was almost equally seen in males and female students. 82.2% of the males and 61.8% of the females were having moderate type of overall stress among MBBS students at NCRIMS, Meerut (Table I). Statistically significant difference between males and females was

observed in academic ($P=0.007$) and in MSSQ index score ($P=0.02$) with males more affected than females.

Table I: Gender-wise distribution of frequency of students across various stress domains and MSSQ (N=150).

Stressors	Gender	Perceived stress level.			
		Never	Mild	Moderate	High
Academic	Male (64)	-	7(10.9%)	34(53.1%)	23(35.9%)
	Female (86)	-	25 (26%)	47(54.65%)	14(16.27%)
Interpersonal/ Intra-personal	Male (64)	4(6.25%)	28 (43.75%)	27 (42.18%)	5(7.81%)
	Female (86)	6(6.97)	48 (55.81%)	21 (24.41%)	11 (12.7%)
Teaching	Male (64)	5 (7.81%)	28 (43.75%)	25 (39.06%)	6 (9.37%)
	Female (86)	6 (6.97%)	46(53.48%)	24 (27.90%)	10 (11.62%)
Social	Male (64)	12(18.75%)	31 (48.43%)	15 (23.43%)	6 (9.3%)
	Female (86)	8 (9.30%)	46(53.48%)	25(29.06%)	7 (8.13%)
Drive	Male (64)	15 (23.43%)	25 (39.06%)	18 (28.12%)	6 (9.3%)
	Female (86)	25(29.06%)	41 (47.67%)	16 (18.60%)	4 (4.65%)
Group	Male (64)	7 (10.93%)	19 (29.68%)	31 (48.43%)	6 (9.37%)
	Female (86)	4 (4.65%)	36 (41.86%)	31 (36.04%)	15 (17.44%)
MSSQ	Male (64)	-	15(23.43%)	49(76.5%)	-
	Female (86)	-	35(40.96%)	51(59.3%)	-

The study was conducted on Indian students after the COVID-19 outbreak to assess the factors associated with psychological disorders during a pandemic situation, stress in particular. The results show that fear of vulnerability, self-management, and failure to accept virtual learning impact.

Tertiary education has always been regarded as highly stressful environment to student. Studies have revealed a high prevalence of stress in medical students, ranging from 30% to 50% (14, 4). The overall prevalence of moderate to high stress in Malaysian study showed (41.9%) (11) and a British study (31.2%) (14). This difference could be either due to the different instruments used in other studies or it could be a real difference. Our study showed that 25% students reported high stress levels related to the academic that included frequent examinations & assessment methods, grading methods, academic schedule and lack of time for review. The same was observed as the greatest source of stress in Malaysian study (24%) (11), by Chandrashekhara et al (8) in Indian students at a medical college at Nepal and in studies at Saudi Arabia (25%) (15).

More than 50% of medical students at Pakistan medical college reported academic stress in higher quartile (Mean >28) in the study by Shah et al (9). Study of Abraham et al on Indian first year students of MMC also observed a higher % of students (52.5% to 91.2%) having sources of stress from academic category regarding information overload and frequency of summative examination (16).

Stress associated with examinations was reported across all the years of BDS by Acharya (17) but not observed by Westerman et al (18). Supe A N in his study found that 73% of first year medical students perceived stress with academic factors as a greater perceived cause of stress in MBBS medical students (4). First year students in India have to undertake repetitive summative examination of the study is (71%) which is higher to Thai study (61.4%)

Only 9% of the students faced high stress due to relationships within one's own self, including poor motivation to study, health problems and self-conflict which was more in females' severe health related stress was observed by Hamza et al (15) in Saudi students (7.2%) mostly in females. Difficulty with the colleagues and problems with roommate, and difficulty in approaching the teachers varied from 11.6 to 25.8% among first year students by Abraham R et al (16) and was higher in students at Nepal (36.2%) (8).

Moderate to high Stress due to teaching was observed in 40% of students almost in equal proportion of male & female students.

Lesser percentages were observed by Abraham et al in MMMC medical students (< 12.5%) (16). Lesser stress associated with faculty behaviour among first year students of dental college was also seen by Acharya S (17). The finding is in contrast to those reported by Westerman et al where the nonclinical years were more stressful however the study was done in dental students & can be because of limited interaction with first year students (18).

Moderate to high level of social stress was seen in 20% of the students in our study but less social stress was also observed by Shah et al (9).

Psycho-social stress was same in Indian students studying in Nepal (21.7%) (8) but higher in Malaysian students (41.9%) (11) which may be due to different tool used for analysis of stress. In our study social stress was more in males than in females which can be due to inquisitive nature of males and the liberty taken by them away from home. Also, since no patients' interaction is there in first year, such stress is not evident in first year of MBBS. Moderate to high stress due to Unwillingness to study or study by compulsion was evident in both females and males (13-16%). Parental compulsion was observed to be 60% responsible cause of stress in study by Shah et al (9). Similar results were also seen by Acharya (17) but in dental students. Unwillingness and dissatisfaction of joining the course that is not their first choice causes reduced tolerance to behaviour of faculty.

Limitations

This cross-sectional study was based on self-reported Information provided by students; therefore, the limitations are: Some potential for reporting bias Interpretation of the questions or desire to report their emotions in a certain way Inaccuracies of responses.

4. Conclusion

The study perceived the factors affecting stress among first year medical students with 79% of the students face moderate to high levels of stress in our medical college.

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