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Research Article

Scoring Stress in Medical Students: A Stratified Analysis to Help Develop an Effective Mentor-Mentee Program in a Medical School Setting, Bhubaneswar, Odisha

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Abstract

Medical education is demanding and has one of the longest and toughest curricula. Medical students who have just entered late adolescence, thus have stress that can be categorized as family, friends, self-care, and academics, as per their sources of origin. The current study shares the results of a survey wherein students from 1 medical school, from different semesters, volunteered for counselling sessions planned for them by the Institution in the post-pandemic school opening. The tool was a self-administered questionnaire-based tool eliciting responses to score the stress experienced by the students due to family, friends, self-care, and academics on a Likert scale of 0-4(no stress to severe stress). The 4 subscales were adapted from the MSSQ questionnaire, which is seen to be easy to administer and understandable. The study had 378 participants, of which 63% were girls. The study brings out strongly that academic stressors are highest among medical students (25.69 (23.08-28.3)) and more so among the girls, with a mean difference of score being 11.65 (95% CI 6.428- 16.873; p<0.005). The next significant stressor was self-care, which was equal for males and females. Thus, the study offers good inferential grounds to design a need-based counseling program for the students.

Keywords: Medical undergraduates, Stress, Self-care stress, Academic stress

Introduction

Medical schools have unique stressors other than those of the general university education and along with this the students also undergo varying degrees of stress throughout their various years of medical education [1-4].

In India, the medical course offers great prestige to the selected candidate; however, most of the students are exposed to an environment of staying away from home and managing a complex mix of studies, taking decisions, making new friends, and also building up their own personality and take on new habits. This well-known fact was compounded by unique situations posed by the pandemic, which threw every educational curriculum into complete disarray and the medical curriculum was worse and directly impacted. The Indian medical system follows a five- and half-year curriculum and the induction itself has its stressors. The colleges range from private to public ownership and the educational campus facilities are slowly being standardized as per the National Medical Curriculum. Few medical schools have any provision for offering counseling advice to such students and for those who have, the intervention is not well-defined, and more need based. Being a part of adult learning and with a common comprehension that medical student in making must take care of the sick and society, there are few initiatives in place, especially in India to cater to their mental health, while they go through the tough medical curriculum [5,6].

A study conducted by Sreerama reddy and co-authors revealed that the most common sources of stress were high parental expectations, the vastness of the courses, dissatisfaction with class lectures, etc. [7]. Another meta-analysis by Rotenstein et al. stated that the overall prevalence of depressive symptoms among medical students was higher than that reported in the general population, which reinforces the need for effective preventive efforts and increased access to care for medical students [8]. The current study brings out an explorative analysis specific to a Deemed University Medical School, which has an in-house counselling and mentor-mentee programme for its undergraduate students and which offered a unique opportunity to measure the stressors among these young adults and plan a strategy to help them tide with their concerns.

Methodology

A rapid cross-sectional survey was carried out at Kalinga Institute of Medical Sciences, Bhubaneswar from July to August 2022. Target participants were the undergraduate medical students from the institute who volunteered for counselling sessions arranged for them, offered consent, and were included in the study. Those who were less than 18 years were excluded from the study. A convenience sampling technique was used and a total sample size of 378 study participants was achieved from 3 sessions of counselling.

A pretested semi-structured, self-administered survey tool was distributed among the students who had given consent. The first section consisted of independent variables which had basic student information like age groups, gender, semester, and current place of residence. The second section was a stressor scale which was adapted from the Medical Student Stressor Questionnaire (MSSQ) [9]. The scale comprised of 34 statements seeking the presence or absence of stressful aspects, to be rated on a 5-point Likert scale with 0 being no stress at all and 4 being severe stress. It was built to measure 4 subscales which were family stressor subscales which consisted of 4 items, friends stressor subscale consisting of 7 items, self-care subscale consisting of 8 items and academic stressor subscale which had a total of 15 items. Anonymity of the information was assured, and the results were analyzed using SPSS version 22.0. Descriptive statistics for the independent variables were reported in frequency, Cronbach alpha was used to test the reliability of the subscales and the internal construct was validated by taking the psychologist's opinion. The scale was found suitable for the Indian context and was self-administered. Being a part of the routine student support program, IEC approval was waived, and requisite permissions were taken from the medical school authorities.

Results and Discussion

A total of 378 students were included in the study. Table 1 gives the brief socio demographic composition of the study sample. Out of the total study participants most of the students i.e., 63% (238) were females and 35.7% (135) were males. Since participation was voluntary, it was evident that females were more responsive to such support programs and reasons for lower male participation would be that they shy away from such programs as has been reported in studies [10-12].

Table 1: Sociodemographic characteristics of the study participants.

Socio-Demographic Characteristics		Frequency (in number)	Frequency (Percentage %)
Age	18-21	249	65.9
	22-24	122	32.3
	>25	3	0.8
	Not responded	4	1
Gender	Male	135	35.7
	Female	238	63
	Not responded	5	1.3
Semester	1^{st}-2^{nd}	68	18
	3^{rd}-5^{th}	207	54.8
	6^{th}-9^{th}	92	24.3
	Not responded	11	2.9
Accommodation	Home	49	13
	Hostel	298	78.8
	Own accommodation	5	1.3
	Not responded	26	6.9
Education of Father	Higher secondary	8	2.1
	Graduation	195	51.6
	Post-graduation and above	125	33.1
	Not responded	50	13.2

Education of Mother	Higher secondary	19	5
	Graduation	180	47.6
	Post-graduation and above	117	31
	Not responded	62	16.4

The majority, i.e., 65.9% (249) were in the age group of 18-21 years followed by 32.3% (122) who were in the age group of 22-24 years. 54.76% (207) were in 3rd to 5th semester and 78.8% (298) students resided in hostel at the time of the study. The minimum education level of most of the parents (≈50%) was graduation (Table 1).

Being a deemed private university, this finding is not applicable to government institutions, and the information was self-reported, and the veracity was not validated (Table 2).

Table 2: Stressor subscales and their mean scores.

Dependent Scales	Total Items (N=378)	Score Range	Cronbach Alpha Stats Mean (95% CI)
Family Stress Score (n=347)	4	0-16	0.523 2.47 (1.91-3.02)
Friends Stress Score (n=331)	7	0-28	**0.745** 4.56(3.49-5.63)
Self-care Stress Score (n=331)	8	0-32	0.657 6.99 (6.07-7.91)
Academic Stress Score (n=278)	15	0-60	**0.901** 25.69 (23.08-28.3)

Table 2 shows the academic stressor subscale consisting of 15 items and a score range of 0-60 showed a mean of 25.69 (95% CI 23.08-28.3) and the highest reliability with a Cronbach alpha of 0.901 followed by the self-care stressor subscale with a total of 8 items and a mean of 6.99 (95% CI 6.07-7.91). This is also reported in many studies in India, Iran, and Dhaka wherein curriculum stress wears heavily on medical students [12-14]. Although in those studies mental and psychological distress was measured using SRQ-20 questionnaires and they did not try to find out other possible stressors among the students. This study attempts to holistically measure all possible stressors and brings out uniquely that self-care is also a concern for medical students (Figures 1-4).

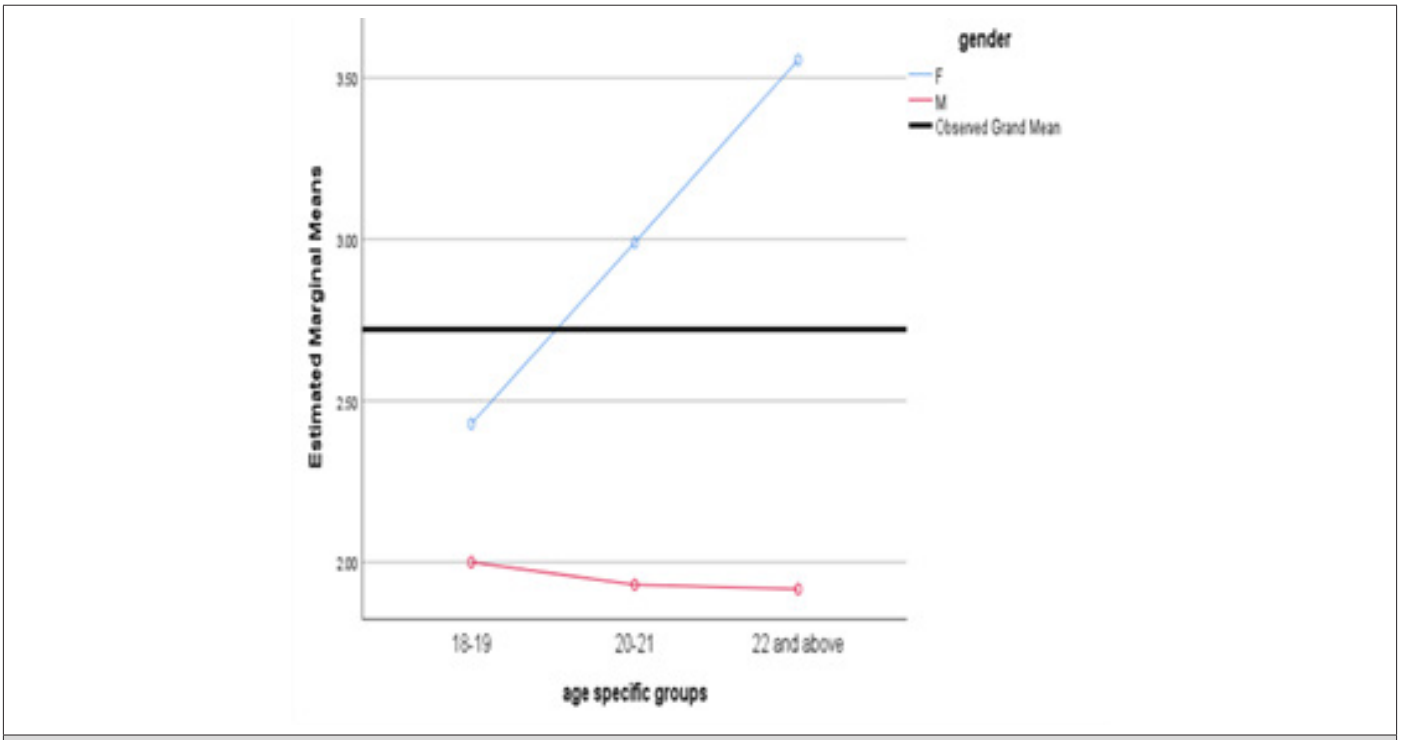

Figure 1: Family stress subscale.

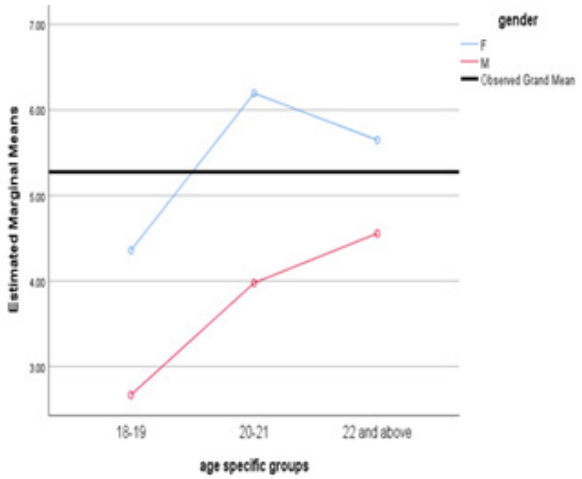

Figure 2: Friends stress subscale.

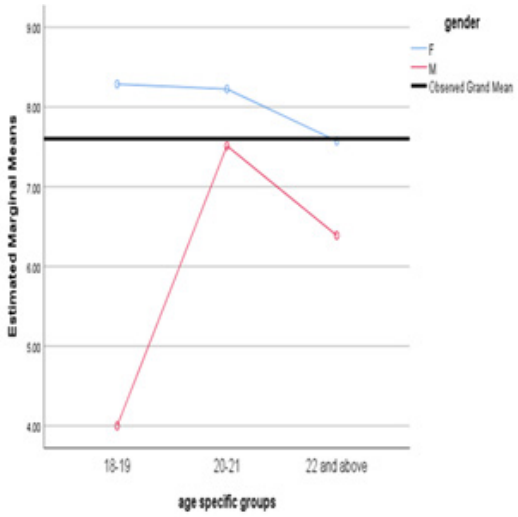

Figure 3: Self-care stress subscale.

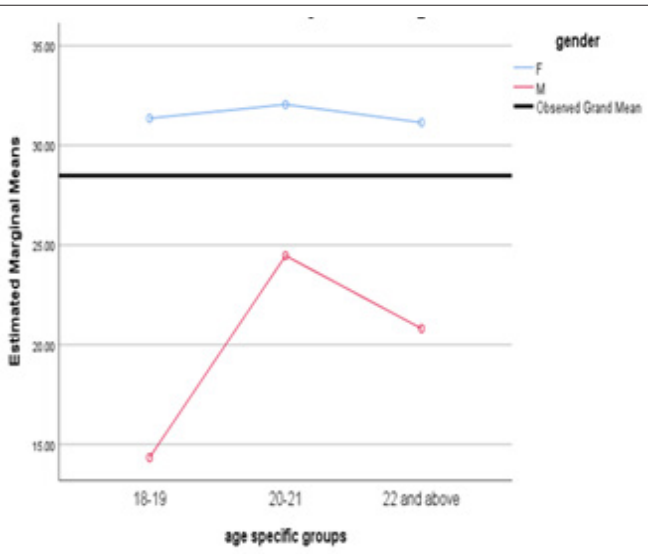

Figure 4: Academic stress subscale

The effect of stress subscales on age groups and gender have been depicted in Figures 1-4. Figure 1 shows the relation between age groups and gender with the family stress subscale. As the age increases the stress among females increases whereas for males it decreases. On the contrary, in the friend's stress subscale, the stress among males increases with age as compared to the females (Figure 2).

In the self-care stressors and academic stressors (Figures 3 & 4), the stress among the students of both genders peaked around 20-21 years of age and then gradually decreased. Nonetheless, females had a higher stress level than males in all four subscales.

Table 3 indicates the mean difference between the females to males in the academic stress subscale was 11.651 (95% CI 6.428-16.873) and this difference was found to be statistically highly significant with a value of <0.001 which was followed by the self-care stress subscale that showed a mean difference of 2.061 and was found to be statistically significant (Table 3).

Table 3: Association of stressors with genders.

Dependent Variable	(I) Gender	(J) Gender	Mean Difference (I-J)	Std. Error	p-Value	95% CI for Difference b
Academic Stress Score	F	M	11.651	2.651	>0.001	6.428- 16.873
Self-care Stress Score	F	M	2.061*	0.934	0.028	0.221-3.901
Family Stress Score	F	M	1.042	0.56	0.064	-2.206
Friends Stress Score	F	M	1.667	1.086	0.126	-4.279

Note*: Based on estimated marginal means. *The mean difference is significant at 0.05 level. b. Adjustment for multiple comparisons: Bonferroni.

The above study was conducted with a surrogate objective to understand the dynamics of stress in medical students and design a counselling session that prioritizes the concerns that need the most attention. Hence the above inferential statistics, uniquely done for the study bring out that girls are stressed much more than boys and even in the sub-domain of self-care, wherein they cease to watch their diet, care routine, and even their physical attributes. Being an adolescent age group and in a learning environment that encourages group teaching, distance from family was not a hindrance for most of the participants of the study, both boys and girls, and neither was making friends a prerogative. The hostel subsistence too ensured and taught them several coping mechanisms to manage friends and being away from family.

The study gives a dipstick measure of a mix of stressors and attempts to quantify and thus prioritize the stressors that are most relevant to the student. The biggest limitation is the inability to cover more students and those from different schools due to post-pandemic work pressures and ethical permissions. For the current study, ethical approval was waived as the exercise was a part of a routine mentor-mentee programme running in the university and was done after the consent of the participants and requisite institute authorities.

However, the short yet meaningful study throws light on the strong need for a robust mentor-mentee program or access to in-house or institution-based counselling for medical students, right from the 1st semester, where the stress is maximum. There is a dire need to devise means and ways to safeguard the health of the medical students, who would be vested with the responsibility of safeguarding the health of the community soon.

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