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A Study on Perceived Stress among Medical Students from a Private Medical College in North India

Dr Aditi Jain¹, Dr Abbas Mehdi²

¹Assistant Professor, Department of Psychiatry, Career Institute of Medical Sciences and Hospital, Lucknow, Uttar Pradesh, India

²Professor, Department of Psychiatry, Career Institute of Medical Sciences and Hospital, Lucknow, Uttar Pradesh, India

Abstract: <u>Background</u>: There is a growing concern about stress during undergraduate medical training. The process of getting metamorphosed into a professional doctor from a naïve student is quite challenging. <u>Aim</u>: To determine the prevalence of stress and the levels of stress in relation to various stressors among medical students at a private medical college from North India. <u>Methods</u>: A cross sectional study was conducted including 393 undergraduate medical students from all professional MBBS years as respondents. After taking approval of Institutional Ethical Committee and informed consent from all the participating students, a structured questionnaire that included 'Demographic details' and 'Assessment of Perceived Stress due to various stressors' was administered to the students. Data set was prepared for all the respondents. Statistical analysis was done using SPSS version 20.0 <u>Results</u>: The overall prevalence of stress was found to be 37.9%. The prevalence in male and female students was 38.11% and 37.6% respectively. The prevalence of stress among first, second, third and final year student was found to be 43.2%, 28%, 31% and 50% respectively. Fear of failure in exams and food in canteen and hostel emerged out to be associated with severe stress indicated by a median rating of 4. For these factors, the gender - wise medians indicated that male students were more stressed than females. <u>Conclusion</u>: Our findings are in keeping with various other studies that highlight the need to address this burning issue and teach the medical students different stress management techniques to improve their coping ability during the demanding professional course.

Keywords: perceived stress, medical students, private medical college, North India

1. Introduction

Medical profession is highly valued in the society but the process of getting transformed into a professional doctor from a naive student is quite tough. The pleasure of getting admission into a medical college after clearing tough competitive exam does not last long as very soon it becomes clear that the training is very strenuous and taxing. The environment in medical colleges is quite stressful in India and other countries in the world and stress is reported to be the most common hurdle in medical education. It definitely exerts a negative effect on the academic performance, physical health, and psychological well - being of the students who are supposedly going to be the pillars of the future healthcare system. Several studies from India and many other countries spanning different continents have reported high levels of stress among medical students from varied sociocultural and economic backgrounds. (1 - 9) Various studies have even reported a high level of depressive and anxiety symptoms among medical students. (10 - 11). Therefore, early detection and intervention may prevent and minimize the ill effects of distress on such students. Previous studies from India and across the world have identified academic factors as the most important factors responsible for stress among medical students However, most of the studies have focused on either 1st year MBBS or only one particular professional year of MBBS. (12 - 13). The current study was done to evaluate the prevalence, levels of stress and major factors causing stress among medical students from all the four professional years of their MBBS course at a private medical college from North India.

2. Aim and Objectives

This study was undertaken with the following objectives:

- 1) To determine the prevalence of stress among medical students at a private medical college from North India
- 2) To explore the levels or severity of stress among these individual students.
- 3) To explore the levels or severity of stress in relation to various factors among these students.

3. Methodology

Setting: a private medical college in North India. Study Design: A cross sectional survey Approval of Institutional Ethics Committee for our study was taken in the month of December 2021

Sample Size: A total of 393 medical students

Inclusion criteria:

- 1) Males and females
- Medical students studying in various professional years of MBBS course at a private medical college from North India.

Exclusion criteria:

1) Those who refused to be a part of our study (for any reason)

Ethical considerations:

 Before starting the study, approval for this study was obtained from the Institutional Ethics Committee in December 2021.

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SJIF (2022): 7.942

- Informed written consent was obtained from all participating students.
- The nature and purpose of the study was explained to 3)
- 4) Confidentiality of the information provided was maintained.

Description of the questionnaire

The questionnaire was broadly classified into two categories: Demographic details and Assessment of Perceived Stress due to various stressors.

Demographics mainly included personal information of student like age, sex, rural or urban background, home town (state), whether living in hostel or not and year of MBBS presently in. These questions were intended to know about the background of each student.

Assessment of Perceived Stress due to various stressors included 32 stressors which were selected based on previous studies and modified according to the study requirements. The stressors spanned various areas such as academic, emotional, physical, and social. Likert's 5 - point scale was used to capture the intensity of stress due to each factor. The scaling ranged from 0 (No stress at all) to 4 (Severe stress). Students were asked to respond to each stressor referring to this scale. The questionnaire was peer reviewed by faculty members of Institutional Ethical Committee before actual survey. The stressors included 'competition for post graduate seats', 'examinations and marks, academic competition with peers, fear of failure in exams, lack of time to do assigned college work, food in canteen and hostel, feelings that you don't have time for personal hobbies and sports, college timings, quality of teaching, inadequate library and internet facilities, receiving criticism from teachers for your performance, lack of homely atmosphere in living quarters or hostel, insecurity concerning professional future, inability to cope with tremendous amount of syllabus, financial burden, inadequate social support, family atmosphere, inapproachability of teaching staff, too many internal assessment exams, everyday travel to college and back, difficulty to cope with English medium, high expectations of parents for your performance, conflict with peers, shortage of equipment/lab facilities, relations with seniors, atmosphere created by the teachers, confusion regarding change in profession, personal physical health, concern about physical appearance, lack of communication skills, problems in romantic relationships, studying in a private medical college.

How data collection was done

Students were briefed about the purpose of study and the questionnaire. Informed written consent was obtained from all participating students. The questionnaire was circulated among the students in an online format. They were instructed to fill up the responses within half an hour. Respondents were asked to rate each event in themselves during the recent weeks by choosing from five responses: _causing no stress at all, _causing mild stress, 'causing moderate stress', _causing high stress' and '_causing severe stress'. The items were scored by assigning a value of zero to four for each of the respective responses. For example, a response of causing no stress at all would be scored as zero and a response of causing severe stresses scored as four. Confidentiality of the information provided was maintained. Data sets were prepared for all the respondents.

Outcome parameters:

- 1) The prevalence of stress among respondents.
- 2) The levels of stress among these individual students.
- 3) The levels of stress in relation to various factors among these students.

Statistical analysis

The descriptive statistic like median score was obtained for each stressor based on the responses of students on Likert scale. The gender wise medians and professional MBBS year wise medians were also obtained for each stressor. Also, the median score across all stressors was obtained for each student as an indicator of his/her stress level. The data on median 6 scores of students was used to obtain percentage of stressed (median \geq 3) and not stressed (median < 3) students. These percentages were also obtained according to levels of some key variables like Gender (Male/Female) and professional MBBS year currently in. For each stressor, the equality of median values between the levels of each variable was tested using Wilcoxon rank sum test.

4. Results

Descriptive statistics

Table 1: Showing the sociodemographic parameters like age, gender, socioeconomic background, current MBBS professional year and whether a day scholar or hosteler

Sociodemographic / clini	No. of patients n (%)					
Age (in years)	18 - 28 years	393 (100%)				
Mean age	22.54 years					
Candan	Male	202 (51.2%)				
Gender	Female	191 (48.8%)				
MBBS professional year	1st year	94 (24%)				
	2 nd year	103 (26.2%)				
	3 rd year	102 (25.9%)				
	4th year	94 (24%)				
Background	Rural	37 (9.5%)				
	Urban	246 (62.5%)				
	Semi - urban	110 (28%)				
Hosteler/day scholar	Hosteler	363 (92.3%)				
	Day scholar	30 (7.7%)				

Prevalence of Stress

Table 2: Showing prevalence of stress among the medical students

Overall prevalence	37.9%
Gender - wise prevalence	
males	38.11%
females	37.6%
Professional year wise prevalence	
1 st year	43.2%
2nd year	28%
3rd year	31%
4thyear	50%

Median score for each student was obtained and 149 out of 393 students were found to have a median of at least 3 which amounted to a prevalence of 37.9%.

SJIF (2022): 7.942

The prevalence in male and female students was 38.11% and 37.6% respectively. This difference was statistically insignificant.

found to be 43.2%, 28%, 31% and 50% respectively. This difference was statistically significant with a p value of <0.05.

Levels of Stress due to Various Stressors

As regards professional MBBS year, the proportions of first, second, third and final year students who were stressed were

Table 3: Showing overall median scores for each stressor, the gender - wise medians for each stressor and the median for

each stressor according to the professional year of MBBS

Serial	Stressor		Gender - w	Year of MBBS wise median				
no.		median	Male	female	1st	2nd	3rd	4th
1	Competition for post graduate seats	3	3	3	2	3	2	4
2	Examination and marks	3	3	3	3	4	3	3
3	Academic competition with peers	2	2	2	4	2	2	3
4	Fear of failure in exams	4	4	3.5	4	4	3	4
5	Lack of time to do assigned college work	3	3	3	3	3	2	3
6	Food in canteen and hostel	4	4	3	4	4	3	4
7	Feeling that you don't have time for personal hobbies and sports	2	2	2	3	3	2	3
8	College timings	3	3	3	2	3	2	4
9	Quality of teaching	2	2	2	2	2	1	3
10	Inadequate library and internet facilities	3	3	3	3	3	2.5	4
11	Receiving criticism from teachers regarding your performance	2	2	2	4	3	1	3
12	Lack of homely environment in living quarters or hostel	2	2	3	4	3	2	4
13	Insecurity concerning professional future	3	3	3	3	3	2	2.5
14	Inability to cope with tremendous amount of syllabus	3	3	3	4	4	3	3
15	Financial burden	2	3	2	3	2	2	3
16	Inadequate social support	2	2	2	1	2	1	3
17	Family atmosphere	1	1	1	0	1	0	1
18	Inapproachability of teaching staff	1	2	1	1	2	1	2
19	Too many internal assessment exams	2	2	2	4	2	2	3
20	Everyday travel to college and back	2	2	3	2	3	2	3
21	Difficulty to cope with English medium	0	0	0	0	0	0	0
22	High expectations of parents for your performance	2	2	1.5	1	2	1.5	2.5
23	Conflict with peers	1	1	1	1	2	1	2
24	Shortage of equipment/lab facilities	2	2	2	1	4	2	3
25	Relations with seniors	0	0	0	3	1	0	1
26	Atmosphere created by teachers	1	2	1	1	2	1	2
27	Confusion regarding change in profession	1	1	0	1	1	0	2
28	Personal physical health	2	2	2	2	2	2	3
29	Concern about your physical appearance	1	2	1	1	1	1	2
30	Lack of communication skills	1	1	1	0	1	1	2
31	Problems in romantic relationships	0	0	0	4	0	0	0
32	Studying in a private medical College	3	3	3	3	2.5	3	3

5. Discussion

Various published literatures have documented high levels of stress among undergraduate medical students. (1 - 9) Therefore, in our study, we attempted to identify the prevalence of stress and its severity in relation to various stressors as perceived by medical students across the professional years from first to final year studying at a private medical college from North India. The response rate in our study was about 98.2%. This finding is similar to a number of other studies (14 - 16) The sample size of our study i. e.393 is comparable to other studies. (1, 14) Most of the studies conducted to evaluate stress among medical students focussed on 1st year medical students or one particular year of MBBS. (14, 17). However, we took medical students from all the professional years which is in keeping with some other studies like the one conducted at Seth GS Medical College, Mumbai (Supe; 1998) and a study from a medical college in Saudi Arabia (Inam; 2007) (1, 18) The current study indicated that the overall prevalence of stress is 37.9%. There are some other reported studies with overall proportion of stressed students ranging between 25% and 70%. (1, 6, 14, 16, 19, 20 - 22) 10 The prevalence in male and female students was 38.11% and 37.6% respectively. This difference was statistically insignificant. In Indian scenario, higher stress in males could be because of greater pressure from families regarding academic performance and poor coping abilities. This is in contradiction with various studies that have reported a higher prevalence of stress among female medical students as compared to males. (2, 14, 18, 24). One of the possible reasons for this may be the restriction imposed on females by their family members and society. Notably, a study reported that there was no significant difference in stress between male and female students (Cohen; 1983) (23) As regards professional MBBS year, the prevalence of stress among first, second, third and final year students was found to be 43.2%, 28%, 31% and 50% respectively. This difference was statistically significant with a p value of 0.002. Thus, final year students were found to be most stressed followed by 1st year, 3rd year and 2nd years more stressed than 2nd and 3rd year students. This is in keeping with a study from Tamilnadu which reported that fourth year medical students have the

SJIF (2022): 7.942

highest prevalence of stress (Satheesh; 2015) (25). Another study from Bangladesh reported that Year - IV medical students are more stressed than Year - III (Eva; 2015) (29) However, a study from Saudi Arabia reported that 1 st year medical students were more stressed than other professional years (Inam; 2007) (18). A study from Maharashtra reported that 2nd and 3rd year students are more stressed than 1st years (Supe; 1998) (1).

6. Levels of Stress due to Various Stressors

In our study, out of the 32 stress - inducing factors, the ones that emerged out as the dominant ones (with overall median score equal or greater than 3, are shown in Table 3 of our results. The most stressful amongst all factors were fear of failure in exams and food in canteen and hostel with a median rating of 4. For these factors, the gender - wise medians revealed that males (medians 4 for each factor) were more stressed due to this than females (medians 3.5 and 3 respectively). The difference in the median rating for gender was found statistically significant with P - value of 0.002 (P < 0.05). The MBBS year wise medians for the factors fear of failure in examinations and food in canteen and hostel revealed that stress was high across all the professional years. 'Fear of failure, ' which is a very serious concern to medical students, is mainly because of the enormous syllabus to be covered in a limited time. Many parallel academic activities make it difficult for students to manage their time effectively, which adds to their stress level. Besides, there is continuous flooding of information and knowledge in medical science, which indirectly adds to the stress level of students. Various other studies also reported examinations, academic curriculum, frequency of examinations, performance in examinations, competition with peers were common sources of stress among medical students. (1, 14 - 16, 23, 26 - 28). A notable study from Tamilnadu reported that academically less successful students reported somewhat higher levels of depressive and bodily responses (Anuradha; 2015) (15) 12 In our study, the food in canteen and hostel was perceived as stressful more by males than females. This could be due to better cooking skills among females, better coping skills or better quality of food being provided by girls' hostel mess. This is in keeping with a study from Nepal which reported that the quality of food in mess, emerged out as an important stressor among students in a medical school in Kathmandu (19). However, another study reported that quality of food had no significant influence on stress level (Anuradha; 2015) (15) In our study, other factors with an overall median score of 3 were 'competition for post graduate seats', 'examinations and marks', 'lack of time to do the assigned college work', 'college timings', 'inadequate library and internet facilities', 'inability to cope with tremendous amount of syllabus', 'insecurity concerning professional future' and 'studying in a private medical college' as indicated by an overall median score of 3 as well as a median score of 3 across both the genders and thus equally stressful among males and females. 'Competition for post - graduate seats' was found to be the most stressful factor in a study from Nagpur, Maharashtra (Gade; 2014). They also reported that the stress of competition was found equally high on males and females (16). In our study, both males and female students were equally stressed due to studying in a private medical college. This reflects the financial burden that the long duration of the course may put on the family of the student as some students may have applied for loans to bear the fees of the private college. This adds to the pressure to perform well and procure a postgraduate seat as soon as possible after MBBS so that the student can start contributing to the earnings of the family.

As regards professional MBBS year, the factor 'Academic competition with peers, 'was rated high with a median score of 4 among first year students in the current study. Some factors like 'receiving criticism from teachers about performance', 'lack of homely environment in college and hostel', too many internal assessment exams and problems in romantic relationships were notably stressful for first year students. Notably, 'high parental expectations' 'worry about future' and 'low self - esteem' have been earlier reported to be some of the other prominent stressors among 1st year students apart from academic ones (Salgar; 2014) (14). A previous study from Chattisgarh also reported that Intrapersonal & interpersonal related stress levels and teaching and learning related stress were high among the first - year undergraduate students (Sarkar; 2015). (30). Many first - year students are away from the protective umbrella of parents for very first time therefore there may be feeling of homesickness in the hostels. In our study, stress due to 'Inability to cope with tremendous amount of syllabus' was also highest among first and second - year students. Stress due to 'Competition for post graduate seats', 'inadequate library and internet facilities' and 'college timings' was highest among final year students. Among 3rd year students, none of the factors had median equal to 4. The remaining factors did not induce much stress among the students as indicated by median ratings of less than 3. Most of the previous studies have studied only first year MBBS students in their studies so the comparison of the stressors across the professional years could not be done meticulously.

7. Strengths

Our study included students from all MBBS years unlike most of the previous studies that have solely focussed on 1st year MBBS students or only a particular professional year of MBBS.

8. Limitations

- This a cross sectional study conducted only in one medical college and lacks generalization of results. Therefore, this research only generates a snap shot of the grievances of the students. Following up of these students in the clinical years would reveal the dynamism of the stressors and shed light on the ability of the students to cope with them.
- Since the information was obtained from a self administered questionnaire, information bias cannot be ruled out.
- We did not focus on the coping strategies and the institutional stress relieving factors as attempted by few similar studies.

9. Conclusion

Our study goes with the findings of other studies that the prevalence of perceived stress is high among medical students

SJIF (2022): 7.942

and 'Academic' - related problems are the most common stressors.15 We emphasize the need to review the academics and examination schedules, encourage better interaction of students with the faculty and arrange for counselling sessions for the stressed students so that they may deal with their problems effectively. Stress though a well - studied entity in medical students is yet to be explored further with more research. Further studies can be planned in our college to identify the various coping strategies being adopted by the students to deal with stress. It is important to emphasize that in addition to educating in a professional medical course it is also important to take into account the quality of life of the students during the years of medical training. The results of the current study will serve as baseline data for further indepth studies. Relevant authorities must take more initiatives and support research to develop proper policies for medical education and thus produce high - quality medical doctors who will serve the country and rest of the world.

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