

Research Article

Stress and mental health problems in 1st year medical students: a survey of two medical colleges in Kanpur, India

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ABSTRACT

Background: Incidence of stress among medical students has been reported to be between high and very high. Medical students in pre-clinical phase are more likely to develop psychological distress than medical students in clinical phase. It may affect academic performance and lead to anxiety, depression and substance abuse.

Methods: First year students of one government medical college and one private medical college of Kanpur, Uttar Pradesh, India, were surveyed to find out stress and mental health problems shortly after their admission.

Results: The two colleges showed difference in the frequencies of a number of factors- current stress, sleep problem, sad mood, both parents working, parents giving sufficient time, non-participation in extra-curricular activities, sharing problem with their families, having break-up in a romantic relationship and poor relationships with classmates and roommate. More students of the government medical college reported to have current stress compared to the students of the private medical college. While all students of the government medical who had stress since admission did not recover from it, 55.56% of students of the private medical college recovered from it at the time of our survey.

Conclusion: a) Psychiatry Department of every medical college should be involved in screening 1st year students having stress and mental health problems and managing them. b) Medical education should be imparted in more relaxed and fun filled manner to help students cope with the long and difficult course.

Keywords: Stress, Mental health, Medical students

INTRODUCTION

Stress is defined as the body's non-specific response or reaction to demands made on it.¹ Incidence of stress in medical students reported between 25.9% and 96.8% by various studies.²⁻⁸

The study which found 96.8% stress listed increased pressure of examination, vast syllabus, not getting expected marks, less time for repeated learning and procrastination.² Another study reported that medical students in pre-clinical phase were 1.84 times more likely to develop psychological distress than medical students in clinical phase.⁶ Kitu and Patil reported 71% prevalence of depression among medical students.⁹

Though studies on stress in students of individual medical colleges are many, we came across only two studies comparing 2 colleges.^{6,10} Comparing students of 2 colleges can identify mental health issues which are more prevalent in one college than in other. So we planned a survey of 2 medical colleges, one private and one government, in Kanpur city in India.

METHODS

Kanpur city is located in Uttar Pradesh state which has a population of 4.5 million (2011 Census). It has one government medical college (GSVM medical college) and one private medical college (Rama medical college). Comparison between the two colleges is shown in Table

1. The purpose of the survey was to identify and compare mental health issues including stress in both medical colleges. A survey questionnaire (34 items) was prepared which covered demographic information, drug and alcohol use, mental health symptoms, stress and stressors. Permission was taken from the faculty member taking class prior to the survey.

All students present in the class on the day of the survey were briefed about the purpose of the survey. The copies of the survey questionnaire were distributed among all students. The survey was voluntary and anonymous in nature. It took about 30 minutes to complete the survey questionnaire. All the completed copies of the survey questionnaire were subjected to standard statistical analyses.

Table 1: General comparison of RMC and GSVMMC.

	RMC	GSVMMC
Type of college	Private	Government
Intake per year	100	200
Selection process	No entrance test	State entrance test
Parents' financial status	Good or very good for every student	Average or poor for most of the students
Selection process of faculty members	Does not exist	Based on merit, MCI guideline and performance in job interviews
Academic environment	Relaxed	Serious
Attitude of students regarding their studies	Careless in most	Sincere, diligent
Availability of resources (library books, lab facilities)	Fair	Good
Internal and external examinations	Help is usually provided	Help is not provided
Marking of internal and external examination papers & conducting of practical examinations	Do not follow the university prescribed standard	Always follow the university prescribed standard

RESULTS

Rama medical college (RMC)

Total number (N) of students participated in the survey was 70 (Table 2). The percentage of students present for the survey was 70%. All questionnaires distributed in the class were returned (100%). The mean age of the

participants was 20 (SD: 2.83) with range from 17 years to 22 years. Males & females were 38 (54.2%) & 32 (45.71%), respectively (Table 2). Majority (82.86%) of the participants were from urban area. Majority (44.29%) of participants had their both parents working. Majority (77.14%) of participants had their parents spending sufficient time with them before their admission.

8.57% of students had past history of mental health problem. 7.14% had past history of depression and 1 (1.43%) had had past history of stress. Five (7.14%) of students had family history of mental illness. Thirty nine (55.69%) of participants chose the course themselves. 2.86% of participants reported smoking tobacco. One (1.43%) reported chewing tobacco. Three (4.29%) of the students reported taking alcohol and no student reported taking any other drug of abuse (Table 5). Eleven (15.71%) reported being bullied. Three (4.29%) of the participants mentioned had experienced cyber bullying. Eleven (15.71%) reported having a recent break-up in romantic relationship, and 5 out of them were not coping well with the break-up. Fifty one (72.86%) and 52 (74.29%) had good relationship with their classmates and roommate, respectively. Twenty four (34.29%) and 2 (2.86%) reported good and excellent academic performance, respectively. Fifty nine (84.29%) admitted that they shared their problems with their family. Among the participants 43 (61.43%) were participating in extracurricular activities. Five (7.14%) of the participants reported spending 5 hours or more per day on mobile or internet.

Mental health problems

Sixteen (22.86%) reported having sleep problem. Ten (14.29%) had low appetite. Twenty nine (41.43%) students reported feeling sad. Twenty five (35.71%) had experience of anxiety/fear. Twenty seven (38.57%) reported feeling stressed. Among participants who were feeling stressed fourteen reported that they did something stress to feel better. Twenty seven (38.57%) students reported stress since admission and 12 (17.14%) reported stress at the time of the survey (Table 3). So 15 out of 27 i.e. 55.56% students recovered from the stress since admission at the time of the survey. Among the students (12) who were having current stress only 4 (5.71%) reported that they would consult a psychiatrist in their medical college.

GSVM medical college (GSVMMC)

Total number of students participated in the survey was 112 (56%) & all participated returned the Survey Questionnaire (Table-2). Mean age was 22.5 (SD: 2.5). The age range was from 17 to 30 years. The male to female ratio was 1:1 (56 boys and 56 girls (Table 2). Majority (73.21%) were from urban area. Majority (70.54%) had their both parents not working. Majority (70.54%) had parents not spending sufficient time with them. Nine (8.04%) students had had history of mental

illness. Majority (54.46%) chose the course themselves. Four (3.57%) reported abusing drugs. Two were taking alcohol, one was taking cannabis and one was taking sleeping pills. Three (2.68%) reported smoking cigarettes. Only one (0.89%) chewed tobacco (Table 5). Two (1.79%) had experience of being bullied. Five (4.46%) reported cyber bullying. Nine (8.04%) had break-up in their romantic relationship and 6 out of them coped well with the break up. Nearly everybody (99.11%) reported good relationship with their classmates and roommate. Forty four (39.29%) reported having good or excellent academic performance. One hundred and nine (97.52%) shared their problems with family. One hundred and one (90.18%) participated in extracurricular activities. 13.39% reported spending 5 hours or more on mobile or internet.

Mental health problems

Twelve (10.71%) had sleep problem and 17 (15.18%) reported having low appetite. Twenty seven (24.11%) were sad. Thirty one (27.60%) reported feeling anxious. (Table-3) Thirty four (30.36%) students reported feeling stress since admission and current stress (Table 3). So no students recovered from stress since admission at the time of the survey.

Comparison between the two medical colleges

Mean age of students of GSVMMC was found to be higher than that of students of RMC (22.5 vs. 20) which was not statistically significant.

No statistical difference was found between students of both medical colleges regarding history of smoking, chewing tobacco, alcohol intake & drug abuse (Table 5).

Factors which were found statistically significant

1. Current stress: more in GSVMMC (Table 3)
2. Both parents working: more in RMC (Table 4)
3. Parents giving sufficient time: more in GSVMMC (Table 4)
4. Sleep problem: more in GSVMMC (Table 3)
5. Sad mood: more in RMC (Table 3)
6. Sharing problem with the family: more in GSVMMC (Table 4)
7. Not participating in extra-curricular activities: More in RMC (Table 4)
8. Break-up in a romantic relationship: more in RMC (Table 4)
9. Poor relationship with classmates: more in RMC (Table 4)
10. Poor relationship with roommate: more in GSVMMC (Table 4)

Table 2: Sex distribution of 1st year students in RMC and GSVMMC.

Sex	Medical college				Total	
	RMC		GSVMMC			
	N	(%)	N	(%)	N	%
Female	32	45.71	56	50	88	48.35
Male	38	54.2	56	51	93	51.6
Total	70	100	112	100	112	100

$\chi^2=0.215$, df=1, P = 0.643

Table 3: Comparison of mental health problems between RMC and GSVMMC.

Mental health problems	Medical college				Chi squared test (P value)
	RMC (N=70)		GSVMMC (N=112)		
	N	(%)	N	(%)	
Stress since admission	27	38.57	34	30.36	P >0.05
Current stress	12	17.14	34	30.36	P <0.001
Sleep problem	54	77.1	98	87.5	P <0.05
Sad Mood	29	41.4	27	24.1	P <0.05
Low appetite	10	14.3	17	15.1	P >0.05
Feeling anxious	25	35.71	4	27.6	P >0.05

Table 4: Comparison of other factors between RMC and GSVMMC.

Mental health problems	Medical college				Chi squared test (P value)
	RMC (N=70)		GSVMMC (N=112)		
	N	(%)	N	(%)	
Both parents working	31	44.29	29	25.89	P < 0.05
Parents not giving sufficient time	16	22.86	79	70.54	P <0.001
Sharing problem with family	59	84.29	109	97.32	P <0.001
H/o break-up	11	15.71	9	8.04	P <0.001
Poor relationship with classmate	17	24.29	11	9.82	P <0.05

Table 5: Comparison of drug use between RMC and GSVMMC.

Drug use	Medical college			
	RMC (N=70)		GSVMMC (N=112)	
	N	(%)	N	(%)
Smoking tobacco	1	1.43	3	2.68
Chewing tobacco	1	1.43	1	0.89
Alcohol	3	4.29	3	2.86
Other substance	0	0	4	3.57

DISCUSSION

In the present study mean age of students studying in GSVMMC was found to be higher (22.5 vs. 20) compared to students of RMC and this could be due to the fact that a very tough pre-medical entrance test for admission to a government medical college and most of the students qualify this test after two or three year of preparation. Our survey reported about 38% of students of RMC students and 30% of students of GSVMMC reported stress since admission. This finding was within the range reported in the literature (between 25.9% and 96.8%).³⁻⁸ Number of students experiencing current stress was significantly higher among students of GSVMMC as compared to students of RMC. GSVMMC students were expected to perform well in both internal and external (university) examinations and the students of RMC students were more relaxed as the conduct of examinations and evaluation of examination papers were not done strictly. For this reason GSVMMC students had more pressure on them to perform well in examinations compared to the students in RMC. While 55.56% of students of RMC who had stress since admission managed to recover from it, not a single student of GSVMMC could recover from it. Reasons for this could be: a) having more pressure to do well in internal and external examinations; b) more serious academic environment; c) unable to take a break from their studies. More students of RMC had both parents working compared to that of GSVMMC. Interestingly more students of GSVMMC reported that their parents were not giving them sufficient time. It could be possible that the working parents were doing a good job of juggling

between their professional work and family life. While more number of students of GSVMMC had sleep problem, more number of students of RMC reported sad mood. So sad mood and sleep problem did not occur together in the same students. 41.4% of students of RMC and 24.1% of students of GSVMMC reported having sad mood. Kitu and Patil reported 71% prevalence of depression among medical students.⁹ 22.86% of students of RMC and 10.71% of students of GSVMMC had sleep problem. Regular occurrence of emotional exhaustion, poor sleep quality, and excessive daytime sleepiness affected 60%, 65%, and 63% of medical students, respectively.¹¹ More number of students of GSVMMC reported that they shared their problem with the family. It may be due to the fact that more number of them had only one parent working and other parent was available to listen to their problems. More number of students in RMC did not participate in extra-curricular activities compared to that of RMC. This could be because of more varieties of out-door sports were available at GSVMMC. More students of RMC reported having break-up in their romantic relationships. It could be possible that more RMC students had romantic relationships and so had more break-ups. More number of students of RMC reported having poor relationships with their classmates and roommate. All students of GSVMMC were from the state of Uttar Pradesh. Coming from the same state and sharing same kind of culture the students of GSVMMC may have made friendship easily with their classmates and the roommate. Students of RMC came from different corners of the country and exposed to different cultures. So they may have had difficulties making friendships with classmates and the roommate.

In summary, students of the government medical college and students of the private medical college surveyed showed difference in current stress, both parents working, parents not giving sufficient time, sleep problem and sad mood, non-participation in extra-curricular activities, sharing problem with their families, having break-up in a romantic relationship and poor relationships with classmates and roommate.

Clinical implications of the survey: a) Psychiatry Department of any medical college should be involved in screening 1st year students having stress and mental

health problems and managing them. b) Medical education should be imparted in more relaxed and fun filled manner to help students cope with the long and difficult course.

Limitations

Because of time & resource constraints students of all batches of both the medical colleges were not included in the survey, and no repeat survey was done before the university examinations to find possible increase in mental health problems and stress.

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