

## A Study of Subjective Perception of Stress and Burn out among Students of A Medical College in Ahmedabad, Gujarat

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### Abstract:

**Introduction:** Medicine is one of the most stressful fields of education and stress in medical students has multifactorial etiology. Students often suffer from burnout symptoms due to academic stressors and performance anxiety and can even resort to addictions and use of sleeping pills. However, students also employ various stress-management skills to cope up with such symptoms. **Objectives:** To determine prevalence of perceived stress/ burnout symptoms, factors affecting them, sleep disturbances, various coping mechanisms adopted by the students and role of parents/ friends in coping with such situations. **Method:** A cross-sectional descriptive study was carried out at AMC MET Medical College, Ahmedabad. 300 students were included in the study as selected by stratified random sampling. Pre-designed, pre-tested and validated proforma was used for collecting information. Data was analysed with Microsoft Excel program and suitable statistical tests were applied wherever applicable. **Results:** In the present study, 69% of the students were residing in the hostels and male: female ratio was 1.83. Perception of stress/ burnout symptoms was present in 40.33% students with no statistically significant difference between boys and girls. Mean sleeping hours normally were  $7.83 \pm 1.26$  & during examination, it was  $4.72 \pm 1.63$  (Standard Error {SE}) between the means = 0.19,  $Z=16.36$ ,  $p<0.01$ , Highly Significant {HS}. Further, 178 (59.33%) students were worried most of the time during examinations. 103 (34.33%) students were getting a feeling of low self-confidence during the examinations. Listening to music and watching TV were most commonly practiced coping mechanisms and only 7% students were performing Yoga. Students preferred to talk with their friends about their stress over family. Boys were more stressed as compared to girls with Odds Ratio (OR) of 1.2 times. **Conclusion:** The prevalence of perceived stress and burnout symptoms was high in medical students and they also had less sleeping hours during examination. The practice of coping mechanisms was poor. They should be encouraged to talk about their stress. Also they should be taught and motivated to practice stress relaxation mechanisms to cope with such situations.

**Key words:** Burn out Symptoms, Coping Strategies, Medical Students, Perceived Stress, Sleep Duration

### Introduction :

Medicine is one of the most stressful fields of education because of its highly demanding professional and academic requirements. <sup>[1]</sup> Stress among undergraduate students is multifactorial, arising from both academic and non-academic factors, including socio-cultural, environmental and psychological attributes. <sup>[2]</sup> We would like to elaborate that such performance declines can be simply mental

exhaustion, particularly among medical students, as overtime leads to an increased prevalence of stress-related disorders, depression and sadly, suicide. <sup>[3, 4]</sup> Lack of concentration, inability to focus, difficulty in retaining information, experiencing recurrent headaches, lack of sleep, feeling fatigued and helpless, not putting up the best efforts and experiencing unknown hesitation – these are simply burnout symptoms due to academic stressors and

performance anxiety.<sup>[5]</sup> Stress levels may escalate to significant proportions in some students, to present with symptoms of anxiety especially during tests and examination periods.<sup>[2]</sup> A study by Association of American Medical Colleges revealed that about 13.6% of medical students were suffering from major depression, and about 6% of them had suicidal ideations.<sup>[6]</sup> In a recent study, it was demonstrated that the most common sources of stress among medical students were related to both academic and psychosocial pressures. These included high parental expectations, frequency of examinations, vastness of the academic curriculum, sleeping difficulties, worrying about the future, and about becoming a doctor.<sup>[2]</sup>

Extensive medical curricula, frequent examinations and fear of failure are sources of constant stress and anxiety for medical students, who may cut short their leisure activities and hours of sleep in order to achieve their desired goals.<sup>[1]</sup> Students also employ various stress-management skills to cope up with such symptoms. Because medical students experience a considerable amount of stress during training, academic leaders have recognized the importance of developing stress-management programs for medical students.<sup>[7]</sup> The success of the current model of psychiatric care also depends on de-stigmatization of mental illnesses, highlighting the need for research on perception of mental illnesses.<sup>[8]</sup> Catering for the individual needs of the participant and promoting a safe environment are core elements of a successful self-care programme.<sup>[9]</sup>

In view of all these facts, the current study was carried out to study the prevalence of symptoms of stress and burnout as perceived by students, factors affecting them, duration of sleep and also to study various coping mechanisms for dealing with such symptoms. It was also aimed to co-relate the findings with certain selected socio-demographic variables. The role of parents/ friends in coping with such situations was also assessed.

### Method:

A cross-sectional descriptive study was carried out at AMC MET Medical College, Ahmedabad. Total 300 students were included in the study as selected by stratified random sampling. Pre-designed, pre-tested and validated proforma was used for collecting information. The proforma was validated by two faculties of the community medicine department and a pilot study was carried out amongst 10 boys and 10 girls. After a pilot study, final version of the proforma was prepared and data collection was done. The proforma were distributed amongst the students and they were given 15-20 minutes time for filling the formats anonymously. The study was carried out during the year 2014. Data was analysed with Microsoft Excel program and suitable statistical tests were applied wherever applicable.

### Results:

The present study was carried out amongst 300 students of AMC MET medical college. Out of the total sample, 50 (16.67%) students each belonged to all major batches of MBBS and from rest of the minor batches students were selected in the sample size corresponding to the number of students in that batch. 206 (69%) of the students were residing in the hostels. Male: Female ratio in the study population was 1.83. None of the students were taking examinations at the time of the survey. Out of the total study subjects, 121 (40.33%) students had self-perception that they are having stress/ burnout. 177 (59%) of students were in habit of carrying out their studies during day time whereas 123 (41%) had habit of studying during night hours. Perception of stress/ burnout symptoms among boys and girls was compared and it was observed that difference was statistically not significant ( $\chi^2=0.306$ ,  $P<0.5802$ ). (Table1)

Normally, 201 (67%) of students were in habit of sleeping for 7-8 hours. During examinations majority i.e. 245 (81.7%) students were sleeping for 3-6 hours. Mean sleeping hours normally (other than exam

Table 1 : Socio-demographic profile of study population

Sr. No.	Socio-demographic variable	No. of Students (n=300)	Percentage
1	<b>Semester of MBBS</b>		
	First	50	16.67
	Second	5	01.67
	Third	50	16.67
	Forth	15	05.00
	Fifth	50	16.67
	Sixth	15	05.00
	Seventh	50	16.67
	Eight	15	05.00
	Ninth	50	16.67
2	<b>Residence</b>		
	Hostel	207	69.00
	Local	93	31.00
3	<b>Gender</b>		
	Male	194	64.67
	Female	106	35.33
4	<b>Examination</b>		
	On Going	0	00.00
	Not On Going	300	100.00
5	<b>Perception of stress/ burnout</b>		
	Yes	121	40.33
	No	179	59.67
6	<b>Timing for studies</b>		
	Day	177	59.00
	Night	123	41.00

days) were  $7.83 \pm 1.26$  & during examination it was  $4.72 \pm 1.63$  (S.E. between the means = 0.19,  $Z=16.36$ ,  $p<0.01$ , HS) indicating that mean sleeping hours were statistically significantly less during examination as compared to normal days. (Table2)

As far as feelings and symptoms of burnout are concerned, 178 (59.33%) students were worried

most of the time during examinations. 103 (34.33%) students was getting a feeling of low self-confidence during the examinations. Other feelings like upset, tearful, irritated, fear of failure, demotivation and being misunderstood were also there in the students during the examinations. (Table3)

Table 2 : Duration of sleep amongst study subjects

Sleeping Hours	During Normal Days (other than exam) (n=300)	During Exams (n=300) N (%)
1 to 2	0 (0)	24 (8)
3 to 4	0 (0)	122 (40.7)
5 to 6	45 (15)	123 (41)
7 to 8	201 (67)	28 (9.3)
9 to 10	47(15.7)	3 (1)
11 to 12	6(2)	0 (0)
13 to 14	1(0.3)	0 (0)

Table 3: Feelings in relation to stress/ burn out amongst students during examinations

Sr. No.	Feelings (stress/ burn out)*	Number	Percentage
1	Upset	46	15.33
2	Worried	178	59.33
3	Tearful	29	09.67
4	Irritated	66	22.00
5	Failure	26	08.67
6	De-motivated	23	07.67
7	Misunderstood	20	06.67
8	Lack of Confidence	103	34.33

\*multiple responses

Regarding different coping mechanisms practiced by the students to deal with stress/ burnout, 168 (56%) of students were resorting to listening to music for the purpose of relieving stress. 130 (43.33%) students used to watch TV to feel stress free. Other activities performed by the students to relieve stress were playing sports and reading books and newspapers. The practice of performing yoga to relieve stress was very poor as only 21 (7%) students performed yoga to relieve or prevent symptoms of stress. (Table 4)

When asked specifically about discussion of their stress, 179 (59.67%) students admitted that whenever they subjectively felt stressed out, they did

discuss about their feeling with somebody. Out of all those who did discuss about their feelings, majority i.e. 124 (59.27%) discussed with their friends, 87 (48.6%) discussed with their family about this. Only 15 (8.37%) students admitted that they discussed their problem with others, like their family doctor, teachers etc. (Table 5)

All the students at the time of survey were not taking their examination and the prevalence of perception of stress/ burnout was 40.3%. Insomnia was not present in any of the students at the time of the survey. Subjective perception of stress was more in boys as compared to girls with odds ratio of 1.2. Stress was perceived equally by the students

**Table 4: Coping strategies for alleviating stress/ burn out amongst study population**

Coping strategy*	<2 Hours	Percentage	>2 Hours	Percentage	Total N (%)
Yoga	21	07.00	0	00.00	21(07.00)
Reading books or News Paper	57	19.00	3	01.00	60(20.00)
Listening to Music	159	53.00	9	03.00	168(56.00)
Playing Sports	82	27.33	8	02.67	90(30.00)
Watching TV	115	38.33	15	05.00	130(43.33)

\*multiple responses

**Table 5: Discussion about stress/ burn out symptoms**

Sr. no.	Detail about...	Total	Percentage
1	Discussion of stress (n=300)		
(a.)	No	121	40.33
(b.)	Yes	179	59.67
1.1	If yes whom (n=179)*		
(a.)	Family	87	48.6
(b.)	Friend	124	59.27
(c)	Others	15	8.37

\*multiple responses

**Table 6: Association of stress/ burnout with different variables**

Sr. No	Variable	Total	Stress		Odds ratio
			Yes	No	
<b>1</b>	<b>Examination</b>				
	On going	0	0	0	0
	Not On going	300	121	179	
<b>2</b>	<b>Insomnia</b>				
	Yes	0	0	0	0
	No	300	121	179	
<b>3</b>	<b>Gender</b>				
	Boys	194	91	103	1.2
	Girls	106	45	61	
<b>4</b>	<b>Residence</b>				
	Hostel	207	85	122	1.06
	Local	93	37	56	
<b>5</b>	<b>Family Problems</b>				
	Yes	1	1	0	0
	No	299	120	179	

residing in hostels and those residing locally with their families. One student admitted of the social problem in the family and stress was present in that student. Rest other students did not have any type of problem in the family which could make them feel stressed out. (Table 6)

### Discussion:

The present study which was carried out amongst 300 medical students of a medical college in Ahmedabad city had respondents selected by stratified random sampling with equal representation from all years of MBBS. Variables such as residence, gender, examination status, self-perceived stress and timing for studies were studied. In the present study, 64.67% respondents were males and 35.33% were females, which is similar to the findings in the other study.<sup>[10]</sup> In few other studies, more females were included in the study as compared to males.<sup>[1,11]</sup> In the present study, more students resided in the hostels which is similar to findings in the other study which followed similar sampling technique.<sup>[1,12]</sup>

In the present study, the prevalence of perceived stress was 40.33%, which was less than reported by Ahmed et al, which reported perceived stress level of 59.7% and Maria et al which reported 67.1%.<sup>[1,11]</sup> The difference can be due to the fact that all students in the present study were not taking their examination at the time of survey. A study from Agha Khan University, Pakistan has reported that more than 90% of its students experienced stressed at one time or the other during their course.<sup>[13]</sup> A similar study from India reported that 73% of the students had perceived stress at some point or the other during their medical schooling.<sup>[14]</sup> In the present study majority of the students were sleeping poorly during the examination, as 89.7% students admitted that they were sleeping for less than 6 hours during the examination and 8% were sleeping for less than 2 hours. In another study, 70.2% students were poor sleepers.<sup>[1]</sup> In another study, the sleep disturbances were reported by 48% of the students<sup>[10]</sup> and in one

more study, this was observed amongst 62% of medical students.<sup>[12]</sup> The prevalence of different feelings of burnout were ranging between 6.67%-59.33% in the present study. Most common negative feelings amongst students were sensation of feeling worried and having lack of self-confidence at the time before and during examinations. In a study, it was found that medical students were maximally stressed; anxious and depressed.<sup>[12]</sup> Majority of students with stress reported high scores of poor self-esteem in an another study by Dalia et al.<sup>[2]</sup>

Prevalence of stress relaxation practices by students was having range of 7.0%-56.0%, in the present study. The Yoga was practiced by only 7% of the medical students and the habit of playing regular sports was also poor amongst them. In a study by Ruchi et al, it was observed that medical students had the most unhealthy lifestyle.<sup>[12]</sup> They reported maximum sleepiness without any exercise or physical activities. Exercise promotes better ability to cope with stress as well as to have positive mental health.<sup>[15,16]</sup> The coping strategies commonly used by students as per another study were positive reframing, planning, acceptance, active coping, self-distraction and emotional support. Male students also resorted of alcohol/substance use and self-blame.<sup>[17]</sup> Lack of exercise, among medical students in the present study, may be due to time constraints and demanding curriculum.

In the world health day theme for the year 2017, the emphasis is on talking about the depression and the negative feelings.<sup>[18]</sup> In the present study, 59.67% students discussed about their perceived stress with family/ friends/ others. Majority talked with their friends about their problems. In our study boys had more perceived stress and burnout as compared to girls. It was found that females, younger students, those without a previous higher education qualification, and those not satisfied with their decision to study dentistry were significantly more likely to report perceived stress levels when compared to their counterparts. However, in other studies, men showed more stress (62.9%) than

women. However, females perceived significantly more stress in the interpersonal domain score than males.<sup>[2]</sup>

### Conclusion:

The current study revealed a high prevalence of academic stress and poor sleep quality among medical students. Academic stressors contributed to perceived stress and the negative feelings of stress/burnout during examinations. The practice of coping techniques and physical activities were poor. There is a need to address these stressors by student advisors, peer education and counseling. The students should be taught and motivated to practice different stress management techniques to improve their ability to cope with a demanding professional course. Prophylactic measures can be adopted to manage stress among students, to include early identification of individuals who may be more prone to it, and implementation of stress management workshops can be effective. We can work upon the precipitating events by introducing student support groups, provide professional mentors, and arrange for psychological support rather than judging or negatively evaluating those students who really need psychological help. Further, Catering for the individual needs of the participant and promoting a safe environment are core elements of a successful self-care programme.

### Declaration:

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Conflict of Interest: Nil

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