



## Stress Causing Factors Among Medical Students in Taxila, Pakistan

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**Abstract:** *Medical students undergo various factors causing stress which are major concerns regarding mental disorders and suicidal ideation. In this study descriptive, a survey was conducted by using the convenience-sampling technique among a total of 161 students of 1st and 2nd-year MBBS students. The aims of this study were to evaluate the magnitude of stress-causing factors and to analyze how significantly they are related to stress in medical students. Data collection was done by using Medical Students Stress Questionnaire (MSSQ) with few modifications. Results revealed that among four variables, "heavy workload" and "large amount of content to be learnt" are positively correlated with a value of 0.587. The relationship between these two variables is also significant at both .01 and .05 level of significance. In conclusion, these factors causing stress leads to various stress responses, including physiological as well as behavioral responses.*

**Key Words:** Stress, Medical Students, Factors Causing Stress

### Introduction

Medical students are supposed to take on a lot of responsibilities, absorb a lot of knowledge, participate in a lot of sports, and put in a lot of work for a small amount of time and resources all over the world. This pushes students to improve their skills and fulfil the qualifications for being successful practitioners. As a consequence of the continuous high demand, burnout and stress will develop during and after the training cycle. ([Qamar et al., 2015](#)).

Students are dealing with social, behavioral, physical, and family issues, all of which can affect their ability to learn and achieve academic achievement. (Fish et al., 2003). Some people struggle to cope with the workload and give up, whilst others use the challenge as a motivator to work harder. Medical students, in fact, assume that they are more likely than anyone to become sick (Raj, Simpson, Hopman & Singer, 2000). Both physical and emotional wellbeing may be affected as a result of stress. The students' key issues have been stress control and embracing a healthy way of living (Mundt, 1996). Different coping mechanisms, both negative and positive, are used by pupils. There have been few studies to date that have assessed students' experiences of discomfort, and far fewer have been conducted on medical students. ([Shaikh et al., 2004](#)).

Burnout syndrome is a public health issue because it impacts people in their environments on

a mental, social, and physical level, affecting their quality of life and efficiency significantly. In the 1970s, the word "burnout" was coined to describe a long-term reaction to job-related mental and interpersonal stressors. Burnout is a three-dimensional condition characterized by 1) emotional distress, 2) depersonalization, and 3) a reduced feeling of personal achievement. Unlike tension, which affects all living beings, burnout is a work-related problem. Stress is described as any unwanted mental feeling that is accompanied by predictable biochemical, physiological, and behavioural changes. ([Shadid, et al., 2020](#)).

Students may use a variety of approaches to counteract the negative impacts of stress on their emotional and physical health. Avoidance, social withdrawal, and self-criticism are all techniques for solving the crisis. ([Sharma, 2018](#)). Medical students experience elevated levels of stress and compromised mental health as a result of confusion, inadequate coping skills, and improper consultation, according to studies undertaken in the United States and abroad. It is clear that this crisis must be quantified and adequate measures taken to combat it. Student therapy, empowerment and advancement are required as a matter of urgency. The current research was intended to recognize stress and

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stress causes in medical students [\[Qamar, et al, 2015\]](#).

Various stressors impair medical students and can lead to psychiatric illnesses and suicidal ideation. Stress is the body's reaction to changes that involve physical, mental, or biochemical modification. [\[Mannapur, et al., 2010\]](#) Stress can come from the numerous feelings, including frustration, annoyance, nervousness or anxiousness. [\[Williamson\]](#)

Some medical and physical problems such as headache and ulcers, usually known as psychosomatic or psychophysiological disorders, influence stress, emotions or personalities. Psychophysiological means "psychological and physiological variables' interaction" [\[Selye ,1956\]](#) The response of a body to a stressor is provoked to overcome it, which is not constant in all beings.

Stress means the effects of something that severely affects the body's homeostasis. [\[Sharma, 2018\]](#) The stress response comprises both the nervous and endocrine systems [\[Weerasinghe, 2012\]](#)

According to the three stages of GAS (General Adaptation Syndrome) organism reacts to stress. The "fight or flight" response, which induces the release of stress hormones such as cortisol, not adrenaline, and adrenaline from the adrenal glands, as well as an increase in blood pressure and glucose levels, and a heart rate spike, is the first step. The second stage of "Adaptation" results in various types of physical, mental and behavioral problems, including sleep disorders, indigestion, allergies, muscular pains, lack of concentrations, irritability, smoking ad many more. In the third stage of "Recovery or Exhaustion," the body compensation mechanism either overcome the stressor's effect or lead to more serious health issues like depression, hypertension or coronary diseases. [\[Sharma, 2018\]](#)

Various studies proved that one of the main factors which cause stress among students is heavy academic workload. [\[Donati., Alves., and Camelo, 2010\]](#). Medical students undergo severe stress due to the amount of work that is allocated to them, and mandatory to complete the given task within the specified time period.

Many authors reported that a large amount of content to be learned by the student is another factor of stress among medical students. Large content and the task will overburden students who will stop them from having time to rest and/or for leisure [\[Joëls, et al., 2006\]](#), and this may cause a feeling of incompetence to fulfil the course requirement. The emergence of stress as a result of tests, grades, and deadlines places enormous

pressure on students to succeed, which has a negative effect on learning and memory processes. [\[Schwabe, et al, 2012 ; Corral , et al 2011\]](#)

As mentioned earlier, time constraints for family and friends is another factor in causing the burden of stress on the student, which leads to physical and emotional exhaustion. [\[Brehmer et al, 2014\]](#).

The combination of both of the above variables has a detrimental effect on a medical student's usual daily routine and disturbs the quality of life of a medical student who is primarily concentrated on his studies and has no interpersonal interactions with friends or relatives, triggering psychophysiological shifts, especially in sleep habits, lesson workout routine, and increased irritability, which would be expressed in the student's generalism. [\[Rahim, et al, 2016\]](#)

When performing their duties in hospitals during the COVID-19 pandemic, the medical staff, including physicians, nurses, paramedical services, and medical students, was at high risk, causing heightened anxiety in these inexperienced situations. Schools and colleges have been closed, and face-to-face training and study sessions have been discontinued due to the existing quarantine conditions.

This has had an effect on people's physiological stages of life, as well as a slew of individual and collective physical, cultural, psychological, and educational issues. [\[Meo , et al, 2020\]](#)

This research aims to determine the severity of stress-causing factors and the extent to which they are linked to stress in medical students.

## Material and Methods

In January 2020, the experiment was performed at HITEC Medical College Taxila Cantt. This survey was descriptive of nature. A simple sampling procedure was used to sample 161 first and second-year MBBS, pupils. Prior to data processing, informed consent was obtained data was collected using the Medical Students Stress Questionnaire (MSSQ) and a sociodemographic questionnaire. The questionnaire was pretested on seventeen students who were chosen at random and were not part of the study. MSSQ is a questionnaire that is used to classify medical students' causes of stress and to assess the severity of the stress-induced by these stressors. Heavy workload, a large amount of content to learn, feeling of competence to fulfil course requirements, and lack of time for family and friends to specifically their function as a factor causing stress were taken into consideration among other variables in the questionnaire for this review,

which included heavy workload, a large amount of content to learn, feeling of competence to fulfil course requirements, and lack of time for family and friends to specifically their position as a factor causing stress. Respondents were asked to score their stress on a scale of one to five: [1] no stress, [2] mild stress, [3] moderate stress, [4] extreme stress, and [5] extreme stress. Each answer was scored by assigning a number between 0 and 4 to it. The method is made up of six separate stressor domains defined by artefacts. Multiple categories of stressors include academic-related stressor (ARS), mental related stressor (IRS), related social stressor (SRS), teaching and learning related stressor (TLRS),

desire and push related stressor (DDRS), and community experiences related stressor (GARS). (40.)The data was then inserted into SPSS for Windows version 16.0, and statistical analysis was performed.

### Results

In regard to the results obtained in the descriptive analysis (figure1), we can see that 78% of the students have reported feeling stress due to various variables listed in the questionnaire. Therefore, it can be noted that a higher incidence of stress was recorded amongst medical students of 1<sup>st</sup> year and 2<sup>nd</sup>-year MBBS.

**Table 1.** Level of Severity of Stress among Medical Students

<b>Heavy workload</b>		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid	Causing No Stress At All	6	3.7	3.8	3.8
	Causing Mild Stress	11	6.8	6.9	10.6
	Causing Moderate Stress	38	23.6	23.8	34.4
	Causing High Stress	53	32.9	33.1	67.5
	Causing Severe Stress	52	32.3	32.5	100.0
Total	160	99.4	100.0		
Missing System		1	.6		
Total		161	100.0		
<b>Large Amount of Content to be Learnt</b>		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid	Causing No Stress At All	3	1.9	1.9	1.9
	Causing Mild Stress	11	6.8	6.8	8.7
	Causing Moderate Stress	40	24.8	24.8	33.5
	Causing High Stress	48	29.8	29.8	63.4
	Causing Severe Stress	59	36.6	36.6	100.0
Total	161	100.0	100.0		
<b>Feeling of Incompetence to Fulfil the Course Requirement</b>		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid	Causing No Stress at All	24	14.9	15.1	15.1
	Causing Mild Stress	31	19.3	19.5	34.6
	Causing Moderate Stress	44	27.3	27.7	62.3
	Causing High Stress	27	16.8	17.0	79.2
	Causing Severe Stress	33	20.5	20.8	100.0
Total	159	98.8	100.0		
Missing System		2	1.2		
Total		161	100.0		
<b>Lack of Time for Family and Friends</b>		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid	Causing No Stress at All	26	16.1	16.3	16.3
	Causing Mild Stress	37	23.0	23.1	39.4
	Causing Moderate Stress	35	21.7	21.9	61.3
	Causing High Stress	30	18.6	18.8	80.0
	Causing Severe Stress	32	19.9	20.0	100.0
Total	160	99.4	100.0		
Missing System		1	.6		
Total		161	100.0		

In Table 1, out of 161 respondents, 53 (33%) reported: "heavy workload" being the factor that causing high stress, 52 (32%) respondents had severe stress, 11(7%) had mild stress, and 6(4%) had no stress at all.

Due to other factors, which is "a large amount of content to be learnt" 59 (37%) respondents had severe stress, 48 (30%) had high stress, 40 (25%) had moderate stress, 11 (7%) had mild stress, and 3 (2%) had no stress at all.

In response to "Feeling of incompetence to fulfil the course requirement" 44 (28%) respondents had moderate stress, 33(21%) had severe stress, 31(19%) had mild stress, 27 (17%) had high stress while 24 (15%) had no stress at all.

Regarding "Lack of time for family and friends" respondents had 37 (23%) had mild stress, 35(22%) had moderate stress, 32 (20%) had severe stress, 30(19%) had high stress, and 26(16%) had no stress at all.

**Table 2.** Correlations

		Heavy workload	A large amount of content to be learnt	Feeling of incompetence to fulfil the course requirement	Lack of time for family and friends
Heavy workload	Pearson Correlation	1	.587**	.380**	.299**
	Sig. (2-tailed)		.000	.000	.000
	N	160	160	158	159
Large amount of content to be learnt	Pearson Correlation	.587**	1	.393**	.224**
	Sig. (2-tailed)	.000		.000	.004
	N	160	161	159	160
Feeling of incompetence to fulfil the course requirement	Pearson Correlation	.380**	.393**	1	.158*
	Sig. (2-tailed)	.000	.000		.047
	N	158	159	159	158
Lack of time for family and friends	Pearson Correlation	.299**	.224**	.158*	1
	Sig. (2-tailed)	.000	.004	.047	
	N	159	160	158	160

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

As has already been mentioned that for the paper, four variables/ factors contributing to stress were selected to analyze how significantly they are related to stress. Correlation is a statistical tool that enables us to find out to what extent the variables are related, either positive or negative. In Table 2, cells contain the correlation coefficient for the correlation between four variables, i.e., heavy workload, large content to be learnt, feeling of incompetence to fulfil course requirement and lack of time for family and friends. Significant (2-tailed test) is the p-value which shows that whether the variables are significantly related. From the above table, it can be interpreted that among these four variables, heavy workload and a large amount of content to be learnt are positively correlated with a value of 0.587. The relationship between these two variables is also significant at both .01 and .05 significance degree. So, we may infer that a high workload and a vast amount of material to learn, among the variables chosen in the questionnaire, leading to student tension.

Apart from these variables, we can see that there is a weak positive correlation among other variables though it is significant apart from the feeling of incompetence to fulfil the course requirement and lack of time for family and friends, which is insignificant at .05.

## Discussion

It is recorded that 78% of medical students of 1<sup>st</sup> year and 2<sup>nd</sup> year were suffering from stress. The prevalence of stress among students has been recorded in previous studies by other researchers. More than 80% of students in one study reported feeling anxious. [Bint-e-Hafeez, et al, 2019]

This indicates that the focus of any educational institution is to make its peers good in education as in more knowledgeable, honorable and trustworthy residents who must play a key role in the progress and development of the nation. Teaching medical students is honorable, magnanimous, and virtuous not only for one student but for the population he/she is surrounded with, but also despite that it is imparting various unknown stressors on students

and affecting their health conditions. [\[Dahlin, Joneborg and Runeson, 2005, Deb, Strodl, and Sun 2015\]](#).

The result of this study shows that students were engaged in different level of stress, which implies a high risk of general health problems among medical students. This study shows that students were facing factors causing stress like "heavy workload" and "a large amount of content to be learnt" causing 32% and 37% severe stress, respectively. Students face social, behavioral, physical and family problems. Others find it impossible to deal with the workload and fall back on it, whilst others see the difficulty as an incentive to work harder. Medical students say they are more likely than anyone else to become sick. The main problems of the students were stress management and a safe way of life. The emergence of a substantial relationship between instructional workload and perceived tension among students was discovered by researchers. [\[Williamson\]](#).

It was also indicated in studies that a large amount of content to be learnt, making assignments, managing study, as well as credit hours, has a strong relation with stress level among students [\[Bint-e-Hafeez, etal, 2019\]](#)

Other factors causing stress like "feeling of incompetence to fulfil the course requirement" and "lack of time for family and friends" causing 21% and 20% severe stress respectively.

This study also revealed that "heavy workload" and "large amount of content to be learnt" are positively correlated, which are the contributing factors causing stress among medical students.

Mental wellbeing and coping skills vary from person to person, and this must be taken into account when instructing children in a school environment. Students with low coping skills are more likely to experience fatigue, anxiety, depression, and fear of academic failure, according to previous research. [\[Ang and Huan, 2006\]](#).

Suicidal thoughts or attempts, whether successful or ineffective, may be triggered by a number of stressors. There is a connection between academic stress and suicidal ideation in teenagers, according to studies. [\[Ang and Huan, 2006\]](#). [\[Shadid, 2020\]](#)

This study's limitation surveyed a specific population of students from one medical college in Taxila Cantt; for this reason, results cannot be generalized. Since only four factors causing stress were quantitatively depict the exciting stress levels among students hence future studies are needed to include other factors causing stress and adopt mixed or multiple research approaches to support a precise understanding of medical student's stress.

## **Conclusion**

In short, this study found that medical students bear multiple roles and study hard. The factors, which caused stress, were heavy workload, 'massive volume of learning content', the feeling of competence to meet the training requirement and the lack of time for family and friends. These stress factors induce various kinds of stress reactions within the body, including physiological and behavioral reactions. If stress-causing conditions last a long time, they can lead to general health issues. Various stress-related causes may lead to suicidal thoughts or attempts, whether successful or unsuccessful. Mental wellbeing and coping strategies vary from person to person, which must be addressed when educating them. Low-skill students are more likely to be drained, scared, stressed, and scared of academic failure. These medical students' social and academic habits are deteriorating as a result of the COVID-19 pandemic's long-term quarantine. Sensitivity courses, personal guidance and supervision should be performed periodically for the wellbeing of the medical student. Students are dealing with a variety of mental, cognitive, physical, and familial issues. Some people find it impossible to keep up with their workload and fall behind, whilst others use discomfort as an incentive to work harder. Medical students feel that they are more vulnerable to sickness than anyone else is. The students' biggest priorities have been stress management and adopting a balanced lifestyle. Depression and poor mental wellbeing are common among medical students, according to surveys conducted in the United States and abroad. Counselling, empowerment, and encouragement programs for students are desperately required.

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