



# *Stress and its correlation with Academic Performance and Psychological Health: An Empirical Investigation among postgraduate Gastroenterology students*

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## **Abstract**

*Stress is a prevalent issue among postgraduate students, particularly in highly demanding fields such as gastroenterology. The demanding nature of medical education, particularly in specialized fields like gastroenterology, often leads to heightened stress levels, potentially impacting students' academic outcomes and mental well-being.*

*The prime aim of this paper is to study the correlation of stress among gastroenterology students with their academic performance and psychological health. To serve the objective 129 gastroenterology students studying in the third semester of gastroenterology PG course have been picked from medical colleges of Udaipur, Rajasthan. The results revealed that stress level of gastroenterology students has been increased at the end of the semester in comparison to the beginning of the semester. The correlation between stress and academic performance was negative which means with the increase in stress level the academic performance of gastroenterology students goes down. The result was same for relationship between stress and psychological health, which means stress, has negatively impacted the psychological health of gastroenterology students.*

## **INTRODUCTION:**

*The rigorous demands of medical education are well-documented, often leading to significant stress among students. This is especially true for specialist professions like gastroenterology, where postgraduate students face difficult conditions due to the subject matter's intricacy and intensity as well as their considerable clinical obligations. In this environment, stress is not only a personal problem; rather, it is a widespread issue that can have significant effects on both psychological well-being and academic achievement.*

*Stress in medical school can come from a number of things, such as the demanding academic schedule, clinical rotations, tests, and the need to uphold strict professional standards. Chronic stress has been linked to decreased academic performance, psychological problems like anxiety and depression, and burnout, according to earlier research. Chronic stress has been linked to decreased academic performance, psychological problems like anxiety and depression, and burnout, according to earlier research. There hasn't been much research done on the precise relationship between stress, academic achievement, and psychological well-being among postgraduate gastroenterology students.*

*It is essential to comprehend this link because it can guide the creation of focused interventions that promote students' academic achievement and well-being. A supportive learning environment is crucial for the development of capable and resilient healthcare professionals. It also includes effective stress management and mental health support.*

*The purpose of this study is to empirically examine the relationship between stress, psychological well-being, and academic achievement in postgraduate gastroenterology students. Using a mixed-methods approach, we aim to measure the level of stress and its effect on academic performance while also delving into students' individual experiences and coping mechanisms through qualitative interviews. Our objective is to give a thorough grasp of the difficulties these students encounter and to suggest practical solutions for educational institutions to better meet their academic and psychological demands.*



*This empirical study emphasizes how important it is to provide focused interventions in order to reduce stress and support postgraduate medical students' psychological wellbeing. Enhancing academic performance and mental health could result in better-prepared healthcare professionals if stress management programs are put into place and a supportive learning atmosphere is created in the classroom.*

## **REVIEW OF LITERATURE**

*Stress is a ubiquitous phenomenon in medical education, often resulting in significant implications for academic performance and psychological health. The complex relationship between stress, academic performance, and mental health has been the subject of numerous research, many of which focus on medical students.*

*Because of the demanding academic requirements and high-stakes clinical obligations, medical education is inherently stressful. Dyrbye et al. (2005) found that medical students are more stressed than their counterparts who are not in the medical field. This stress can be caused by a variety of causes, including the amount of material that needs to be learned, time limits, and the emotional strain of patient care Vaez & Laflamme (2008). Because stress is so common in medical school, it is important to look more closely at how it affects students' academic performance and mental health Wang et al. (2014).*

*In educational studies, the relationship between stress and academic achievement has been a central theme. High levels of stress have a deleterious effect on medical students' academic performance, according to a 2010 study by Yusoff, Rahim, and Yaacob. Stressed students frequently report lower grades and increased failure rates. The harmful effects of stress on cognitive capacities like memory, focus, and decision-making can account for this negative association (Kim & Diamond, 2002). Effective stress management techniques are necessary to improve academic results because stress impairs cognitive function.*

*Stress has a significant impact on psychological health in addition to academic success. High stress levels among medical students have been linked to psychological problems such anxiety, sadness, and burnout, according to Givens and Tjia (2002). Stress aggravates mental health issues, which in turn raise stress levels. This vicious loop between stress and poor psychological health is well-established Deb, Strodl & Sun (2015). This reciprocal link emphasizes how crucial it is to treat psychological health issues and stress at the same time in order to provide a helpful learning environment.*

*Numerous strategies have been put out to lessen stress and the negative consequences it has on medical students (Murray-Harvey, 2010). Programs for mindfulness-based stress reduction (MBSR) have demonstrated potential in lowering stress and enhancing medical students' psychological health (Shapiro, Schwartz, & Bonner, 1998). Furthermore, social support—which includes mentorship and peer support—is essential for reducing stress and advancing mental health (Stewart, Betson, Marshall, & Wong, 1995). The success of these interventions emphasizes how important it is that medical schools put in place thorough stress management curricula.*

## **RESEARCH GAP IN LITERATURE AND FUTURE DIRECTIONS**

*Despite the extensive body of research has been done on stress among medical students, there is a noticeable lack of studies that concentrate especially on postgraduate students in specialty areas like gastroenterology. The majority of studies that have been conducted tend to generalize findings across different medical disciplines without taking into account the particular stresses and demands that students in particular specialties face. This is despite the fact that it is well-established that medical education is inherently stressful and that this stress can negatively impact both academic performance and psychological health. This study aims to fill these gaps by providing a focused empirical investigation into the correlation between stress, academic performance, and psychological health among postgraduate gastroenterology students. Future research should concentrate on developing and assessing focused therapies designed specifically to meet the needs of postgraduate students, as well as longitudinal studies to monitor stress and its effects over time.*



## OBJECTIVES

- To study the stress level of gastroenterology students at three stages of semester*
- To discuss impact of stress on academic performance of gastroenterology students*
- To check psychological health status of gastroenterology students*
- To study relationship between stress and psychological health of gastroenterology students*

## HYPOTHESES

- There is no significant correlation between stress and academic performance of gastroenterology students*
- There is no significant correlation between stress and psychological health of gastroenterology students*

## RESEARCH METHODOLOGY

**Research Design:** The study has three variables i.e. stress, academic performance and psychological health of gastroenterology students. The research is aimed to study relationship between these three variables so causal research design has been adopted.

**Sampling:** The Udaipur city has one government medical college and 6 private medical colleges and all colleges are offering post-graduation in gastroenterology. By using stratified purposive sampling 129 PG students of gastroenterology studying in III semester have been included in sample.

**Data Collection Tool:** The questionnaire was specially designed to collect the data. The questionnaire was divided into three parts (1) basic details (2) stress level and (3) psychological health. The academic performance of students was taken from the records maintained in academic registrar office.

**Data Collection Time:** The research was intended to measure stress of gastroenterology students at different time frames so data was collected in the beginning of semester, at the middle of semester and then at the end of the semester.

**Data Analysis Tool:** The data collected in three different time frames was inserted in excel sheet and after coding same was imported to SPSS 22.0. To analyze the data percentage analysis, mean and Karl Pearson's coefficient of correlation were used.

## ANALYSIS OF DATA

### Basic Details of Gastroenterology students

*In the beginning of schedule gastroenterology students were asked to indicate their basic details as shown in table 1*

**Gender of Gastroenterology students:** From the data depicted in table 1, it can be seen that approximate ratio of male (55.04%) and female (44.96%) students was 5:4

**Type of college of Gastroenterology students:** As already discussed in research methodology that there are private and 1 government medical college in Udaipur, so students were asked to specify about their college. It was found that 37.21% students were from Government College and 62.79% students were studying in private colleges.

**Performance in UG course:** As the sample consist of postgraduate gastroenterology students so they were asked to highlight their academic performance in under graduate course. As per the results 16.28% have performed excellent (CGPA>8.5) and 13.18 students have performed below average (CGPS<5.5) during their graduation. The rest of the students have scored CGPA from 7.0 to 8.5 (35.66%) or 5.5 to 7.0 (34.88%).



Table 1: Basic Details of Gastroenterology students

<b>Gender</b>	<b>N</b>	<b>Percentage</b>
Male	71	55.04
Female	58	44.96
<b>Total</b>	<b>129</b>	<b>100.00</b>
<b>Type of College</b>	<b>N</b>	<b>Percentage</b>
Government	48	37.21
Private	81	62.79
<b>Total</b>	<b>129</b>	<b>100.00</b>
<b>Performance in UG course</b>	<b>N</b>	<b>Percentage</b>
Excellent (CGPA > 8.5)	21	16.28
Good (7.0 < CGPA <8.5)	46	35.66
Average (5.5 < CGPA <7.0)	45	34.88
Below Average (CGPA <5.5)	17	13.18
<b>Total</b>	<b>129</b>	<b>100.00</b>

### Stress Level of Gastroenterology students

The stress level of students was monitored at three different times during their whole semester. To measure the stress they were given the statements and were asked to indicate them as true or false. The final result was ascertained with the help of percentage analysis.

The table 2 is presenting the stress level of gastroenterology students at the beginning of the semester. As it's the beginning of the new semester so majority of students (86.05%) get stressed due to lack of skills and professional knowledge. More than 60% gastroenterology students indicated that clinical environment (65.12%) and financial problems (65.12%) are causing stress in their lives. More than half of the gastroenterology students were stressed due to teachers' expectations (55.04%) and heavy load of assignments (53.49%). Overall it was found that 55.14% gastroenterology students were facing significant stress.

Table 2: Stress level of Gastroenterology students at the beginning of semester

<b>Statements</b>	<b>N</b>	<b>Percentage</b>
Lack of skills and professional knowledge causing stress	111	86.05
Taking care of patients cause stress in my life	54	41.86
I get stressed due to heavy load of assignments	69	53.49
Clinical environment is stressful for me	87	67.44
Mechanical life is giving rise to stress in my life	52	40.31
Expectations of teachers is one of the reason of stress in my life	71	55.04
Financial problems are causing stress in life	84	65.12
Family issues are causing stress in my life	41	31.78
<b>Average</b>	<b>71</b>	<b>55.14</b>



The table 3 is showing the stress level of gastroenterology students at the middle of the semester. Likewise the beginning of the semester the students were highly stressed (78.29%) due to the lack of skills and professional knowledge at the middle of the semester. The other significant reasons of causing stress were heavy workload of assignments (63.57%), financial problems (62.02%) and taking care of patients (61.24%). More than half of the gastroenterology students said that expectations of teachers (57.36%) and mechanical life (51.94%). In total 58.04% gastroenterology students reported stress at the middle of the semester.

Table 3: Stress level of Gastroenterology students at the middle of semester

Statements	N	Percentage
Lack of skills and professional knowledge causing stress	101	78.29
Taking care of patients cause stress in my life	79	61.24
I get stressed due to heavy load of assignments	82	63.57
Clinical environment is stressful for me	64	49.61
Mechanical life is giving rise to stress in my life	67	51.94
Expectations of teachers is one of the reason of stress in my life	74	57.36
Financial problems are causing stress in life	80	62.02
Family issues are causing stress in my life	52	40.31
<b>Average</b>	<b>75</b>	<b>58.04</b>

At last the stress of gastroenterology students was ascertained at the end of semester as shown in table 4. The most prominent reason of causing stress among gastroenterology students was heavy load of assignments (78.29%) followed by taking care of patients (72.87%) and clinical environment (72.09%). A significant number of gastroenterology students said that financial problems (62.02%), mechanical life (59.69%) and teachers' expectations (57.36%) are causing stress. On an average 61.14% gastroenterology students reported stress at the end of the semester.

Table 4: Stress level of Gastroenterology students at the end of semester

Statements	N	Percentage
Lack of skills and professional knowledge causing stress	60	46.51
Taking care of patients cause stress in my life	94	72.87
I get stressed due to heavy load of assignments	101	78.29
Clinical environment is stressful for me	93	72.09
Mechanical life is giving rise to stress in my life	77	59.69
Expectations of teachers is one of the reason of stress in my life	74	57.36
Financial problems are causing stress in life	80	62.02
Family issues are causing stress in my life	52	40.31
<b>Average</b>	<b>79</b>	<b>61.14</b>

Table 5 is showing the summary of results of stress among gastroenterology students at the beginning, middle and end of the semester. It could be observed that at the beginning of the semester lack of



knowledge and skills was the major reason of causing stress whereas it was not at all significant at the end of the semester. Initially taking care of patients and assignments load were causing stress among 41.86% and 53.49% students which has been increased to 72.87% and 78.29% respectively at the end of the semester. Minor fluctuations have been observed in rest of the stress causing reasons. On an average at the beginning of the semester 55.14% gastroenterology students were stressed, at the middle of the semester 58.04% gastroenterology students were stressed and 61.14% gastroenterology students were stressed at the end of the semester. It clearly indicates that by the time the stress level of gastroenterology students has been increased.

Table 5: Stress level of Gastroenterology students

Statements	Percentage		
	Begin Semester	Middle Semester	End Semester
Lack of skills and professional knowledge causing stress	86.05	78.29	46.51
Taking care of patients cause stress in my life	41.86	61.24	72.87
I get stressed due to heavy load of assignments	53.49	63.57	78.29
Clinical environment is stressful for me	67.44	49.61	72.09
Mechanical life is giving rise to stress in my life	40.31	51.94	59.69
Expectations of teachers is one of the reason of stress in my life	55.04	57.36	57.36
Financial problems are causing stress in life	65.12	62.02	62.02
Family issues are causing stress in my life	31.78	40.31	40.31
<b>Average</b>	<b>55.14</b>	<b>58.04</b>	<b>61.14</b>

### Impact of Stress on Academic Performance of gastroenterology students

The data about academic results of gastroenterology students was collected from their academic section. It was observed that highest score was 8.6 CGPA whereas the lowest was 5.7. Majority of students have scored more than 6.5 in their previous semester examinations which prove that academically gastroenterology students were good performers. To measure relationship between stress and academic performance of gastroenterology students following hypothesis has taken:-

**$H_0$ : There is no significant correlation between stress and academic performance of gastroenterology students**

**$H_a$ : There is a significant correlation between stress and academic performance of gastroenterology students**

To test this hypothesis Karl Pearson's coefficient of correlation has been used and results are presented in table 6. It can be seen that correlation between stress at beginning and academic performance was -0.19, which has been increased to -0.41 in the middle of semester and it was highest (-0.59) at the end of the semester. All the coefficient are negative which indicate the inverse relationship between stress and academic performance of gastroenterology students, so it can be inferred that with the increase in stress level of gastroenterology students their academic performance goes down.



Table 6: Impact of Stress on Academic Performance of gastroenterology students

Parameters	Stress at the Beginning of Semester	Stress at the Middle of Semester	Stress at the End of Semester	Academic Performance
Stress at the Beginning of Semester	1			
Stress at the Middle of Semester	0.27	1		
Stress at the End of Semester	0.42	0.34	1	
Academic Performance	-0.19	-0.41	-0.59	1

### Psychological Health of Gastroenterology students

Gastroenterology students were given the list of psychological problems they are facing at the different time frames of semester. Table 7 is showing the results of psychological problems faced by gastroenterology students at the beginning, middle and end of the semester. At the beginning of semester majority of students (74.58%) were anxious due to the new course curriculum. 58.27% gastroenterology students were suffering from burnout and 48.28% gastroenterology students were facing irritability. On an average 49.34% gastroenterology students indicated that they were facing one or more kind of psychological problem.

At the middle of semester anxiety level was highest (70.32%) and more than half of the gastroenterology students were suffering from depression (54.12%), irritability (52.96%), loss of memory (52.48%) and burnout (51.47%). On an average it was observed that 54.82% gastroenterology students were suffering from psychological problems.

At the end of semester 65.96% reported that they are facing psychological problems. The major problems faced by the gastroenterology students were anxiety (77.38%), loss of memory (74.25%)

If we compare the results of all three time frames, it can be concluded that the psychological problems have significantly increased. The highest increment has been seen in the problem of loss of memory, as at the beginning of the semester only 32.12% students were suffering from memory loss which has been increased to 74.25% by the end of the semester. The second highest increment has been seen in the case of depression, at the beginning of semester 40.19% gastroenterology students were facing depression but by the end of semester 69.81% gastroenterology students were suffering from depression.

Table 7: Psychological Health of Gastroenterology students

Psychological Problems	Percentage			
	Begin Semester	Middle Semester	End Semester	Overall
Anxiety	74.58	70.32	77.38	74.09
Over thinking	42.58	47.58	52.98	47.71
Burnout	58.27	51.47	62.59	57.44
Irritability	48.28	52.96	58.74	53.33
Loss of Memory	32.12	52.48	74.25	52.95
Depression	40.19	54.12	69.81	54.71
<b>Average</b>	<b>49.34</b>	<b>54.82</b>	<b>65.96</b>	<b>56.71</b>



Table 8 is depicting the over psychological health of gastroenterology students. It can be seen that only 16.28% gastroenterology students were having good psychological health whereas 40.31% gastroenterology students were suffering from bad psychological health. The rest of the gastroenterology students (43.41%) were having the average psychological health.

Table 8: Overall Psychological Health of Gastroenterology students

Overall Psychological Health	N	Percentage
Good	21	16.28
Average	56	43.41
Bad	52	40.31
<b>Total</b>	<b>129</b>	<b>100</b>

To measure the correlation between stress level and psychological health of gastroenterology students following hypothesis has been taken:-

**H<sub>0</sub>2: There is no significant correlation between stress and psychological health of gastroenterology students**

**H<sub>a</sub>2: There is a significant correlation between stress and psychological health of gastroenterology students**

To test the correlation in stress and psychological health of gastroenterology students, Karl Pearson's coefficient of correlation has been used as presented in table 9. It can be seen that correlation between stress at beginning and Psychological health was -0.15, which has been increased to -0.31 in the middle of semester and it was highest (-0.47) at the end of the semester. All the coefficient are negative which indicate the inverse relationship between stress and Psychological health of gastroenterology students, so it can be inferred that with the increase in stress level of gastroenterology students their Psychological health goes down.

Table 9: Correlation between stress and psychological health of gastroenterology students

Parameters	Stress at the Beginning of Semester	Stress at the Middle of Semester	Stress at the End of Semester	Psychological Health
Stress at the Beginning of Semester	1			
Stress at the Middle of Semester	0.27	1		
Stress at the End of Semester	0.42	0.34	1	
Psychological Health	-0.15	-0.37	-0.47	1

**DISCUSSION OF FINDINGS:**

The study's conclusions shed important light on the stress levels, academic standing, and mental well-being of postgraduate gastroenterology students. These findings draw attention to important patterns and connections that emphasize the difficulties these students confront.





### **Increase in Stress Levels Over the Semester:**

The observed rise in stress levels from 55.14% at the start of the semester to 61.14% at its conclusion indicates that the expectations placed on students by their academic and clinical obligations get more intense throughout the course of the semester. There could be a number of reasons for this increase, including approaching exams, a heavier workload, and the need to meet clinical and academic requirements Suldo, Shaunessy & Hardesty (2008). The gradual accumulation of stress highlights the need for continuous monitoring and intervention throughout the semester to prevent stress from reaching detrimental levels.

### **Negative Correlation Between Stress and Academic Performance:**

Stress and academic performance are negatively correlated, meaning that pupils' academic performance decreases as stress levels rise. This result is consistent with previous research by Sohail (2013) which indicates that high levels of stress negatively impact cognitive processes including focus, memory, and problem-solving skills—all of which are essential for scholastic achievement. These results underscore the importance of stress management programs that can help students maintain optimal stress levels and, consequently, better academic performance.

### **Psychological Health Status of Students:**

The data showing that only 16.28% of students had good psychological health, while 40.31% suffered from poor psychological health, is alarming. This suggests that a sizable fraction of postgraduate gastroenterology students are dealing with mental health problems, such as burnout, depression, and anxiety. These findings highlight the urgent need for mental health support services tailored specifically to the needs of these students, addressing both preventative and therapeutic measures similar to the findings of the study by Karademas & Kalantzi-Azizi (2004).

### **Negative Correlation Between Stress and Psychological Health:**

The negative coefficient of correlation between stress and psychological health implies that as stress levels increase, psychological health deteriorates. This relationship is critical as it emphasizes the dual impact of stress on both academic performance and overall well-being. According to Uraz et al. (2013), Poor psychological health can further exacerbate stress, creating a vicious cycle that is difficult to break. Therefore, addressing stress not only has the potential to improve academic performance but also to enhance the overall psychological well-being of students.

### **Implications and Recommendations:**

**Institutional Interventions:** Comprehensive stress management programs should be implemented by universities and medical institutions. These programs should include ongoing stress assessments, counseling, and stress-relieving exercises like mindfulness training and physical activity.

**Support Systems:** Students who have robust support networks, such as mentorship programs and peer support groups, are less likely to feel alone and stressed because they can share their coping mechanisms and experiences with one another.

**Curriculum Revisions and Adjustments:** To give students a more encouraging learning environment, educational institutions should examine and modify the curriculum to strike a balance between academic rigor and reasonable workloads.

**Frequent Monitoring:** Students who are at risk of experiencing severe stress or mental health problems can benefit from early detection and intervention when their stress and psychological well-being are regularly monitored.



## CONCLUSION:

*In conclusion, the study highlights the pressing need to address the stress and psychological health of postgraduate gastroenterology students. Educational institutions may enhance the mental health and academic performance of their students by putting in place targeted interventions and support systems. This will eventually result in more resilient and effective healthcare professionals. As medical education continues to evolve, ongoing research and the implementation of evidence-based strategies will be essential in fostering a healthier and more effective learning environment for future healthcare professionals. Ultimately, the goal is to inform the development of targeted interventions to enhance both academic success and mental well-being in this specialized cohort.*

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