



## Academic Stress and Suicidal Ideation Among Students of Medical Colleges in Peshawar: An Exploratory Study

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**Abstract:** *The current study was conducted with the aim of exploring and investigating the incidence of academic stress and suicidal ideation among medical students in Peshawar, Pakistan. It also sought to find out whether there is any significant relationship between medical students' academic stress and suicidal ideation. Furthermore, it focused on determining whether female students exhibit a higher rate of suicidal ideation in comparison to male students. The population of the study was the medical students of the four medical colleges of Peshawar and both genders were included in the 2nd and 3rd academic years. A simple random sampling technique was used for the selection of samples from three medical colleges in Peshawar city. The total sample size was 180 medical students. A Pearson Correlation and t-test were employed in the data analysis process to investigate and assess the correlation between academic stress and suicidal ideation. Male and female participants perceived stress and suicidal ideation were measured using the Perceived Stress Scale and Suicidal Ideation Scale. The current study indicated that a strong positive relationship has been noticed between suicidal ideation and academic stress.*

**Key Words:** Academic Stress, Suicidal Ideation, Suicide, Medical Students, Academic Performance, Well-being

### Introduction

Although stress is unavoidably an overwhelming word with significantly more negative repercussions, people may control it by making small modifications to their everyday routines. Managers, financiers, legislators, administrators, housewives, and government officials all deal with stress, but students are currently the ones who face it the most. Determining the stressor's origin is essential to comprehensive therapy and the development of successful intervention plans. Stress is invariably viewed as a subjective process involving an individual's assessment in reaction to a potentially hazardous circumstance (Jain & Singhai, 2017). Stress is characterized as the body's general response to external stressors or to distressing incidents in the environment. It is a process by which people understand and deal with potential dangers and obstacles rather than merely a stimulus or a reaction.

Stress is normal in moderation and can even make people more productive and enthusiastic. On the other hand, extreme stress levels perpetuated over an extended period of time can result in serious mental and physical issues (Alsulami et al., 2018). According to Lazarus and Launier (1978), when someone believes that demand exceeds the resources at their disposal, they are in a state of stress. According to the research, up to 63% of medical students have experienced stress, with 25% of those cases being classified as severe (Abdulghani et al. 2011). People believed for several decades that students were the group that was least influenced by stress. According to Banerjee & Chatterjee, in 2016, more and more people are becoming aware that stress is a lifestyle problem that impacts everyone, regardless of developmental level. There was never any notion that studying was a difficult undertaking—students were just required to do it. High standards set by parents for their children eventually become demands that these children cannot meet, which makes them stressful.

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## Academic Stress

Stress is no longer a novel experience since it has affected every part of human existence. The multiple demands—both internal and external—that are placed on students nowadays cause them to feel stressed out in their academic careers. Therefore, the focus of this study is academic stress. Academic stress is defined as the physiological response of students to academic challenges that exceed their ability to adjust. (Wilks, 2008). Undergraduate studies are not void of difficulties and demanding situations. These situations include, but are not limited to, adjusting to a new academic setting, dealing with academic tasks, performance, attending lectures, excessive workload, future job concerns, as well as social and financial pressures. These stresses, whether they are short-term or long-term, have a major effect on students' ability to cope (either in an adaptive or maladaptive way) (DeRosier et al., 2013). According to Lal (2014), academic stress is the psychological discomfort associated with certain anticipated disappointments, such as the possibility of academic failure or a lack of awareness about the potential for such failure.

Many medical schools have an environment that is all-pervasive with stress, offering a strict and authoritative system that promotes student competitiveness rather than teamwork. The most prevalent of all academic groups experiencing high levels of stress are medical students (Jafri et al., 2017). Numerous demanding tasks are required of medical students, and continuous stress negatively affects their psychological well-being in a number of ways. Exam stress was cited by 63.1% of students in a poll conducted at a medical school in Serbia (Backović et al., 2013). Stress is not limited to the undergraduate study phase; it may also persist throughout the postgraduate studies and into a physician's professional life (Tyssen & Vaglum, 2005). According to Green & Faizi in 2021, Academic stress has been found to have a negative impact on the mental well-being of students. Zamroni et al. (2018) conducted a study that found that 61% of medical students and 48.4% of pharmacy students reported experiencing academic stress.

According to Dawn News, Pakistan, it is often acknowledged that medical school is stressful and that it has an adverse effect on student's academic achievement and physical mental health, and mental health. Yousaf Pirkani, a student at Bolan University of Medical and Health Sciences, aspired to become a doctor and successfully completed their first professional MBBS in August 2018. However, just six months later, in February 2019, he tragically took his own life, succumbing to the stress of academic challenges. Yousaf's story reflects the struggle faced by numerous students who grapple with stress, anxiety, and depression due to the pressures of their academic pursuits (Hassan, 2020).

## Suicide Ideation

Suicide is diverse and a serious concern for global health (Snowdon & Choi, 2020). Suicide is one of the many issues that our society confronts, and suicidal ideation or ideas usually occur before a suicide attempt. The Latin words "sui," which means "oneself," and "edium," which means "killing," are the roots of the English word "suicide." It refers to the act of killing oneself. Suicide is defined as a death by poisoning, suffocation, or injury in which the person intends to end their own life (Yadav & Srivastava, 2020). According to WHO (World Health Organization) 2019 statistics, over 700,000 people worldwide take their own lives each year, and among those, suicide ranks as the fourth most common cause of death among those aged 15 to 29.

Snowdon and Choi (2020) reported in a study that while there aren't many reports of suicides involving youngsters under the age of ten, in advanced countries, the rate of suicides among young people between the ages of ten and fourteen, and fifteen and twenty-four starts to rise. Additionally, academic pressures are a major factor in evoking suicidal thoughts (You et al., 2017). According to one of the reports by Saha (2017), every hour, a student takes his or her own life. Additionally, 1.8% of students killed themselves as a result of failing examinations, and in only one year, the suicide rate increased by 80%. Researchers (Adewuya & Oladipo, 2019; Akinremi, 2019; McKinnon, 2016) found that data from 32 sub-Saharan African low- and middle-income nations showed significant rates of suicide among adolescents and young people overall (not specific to any age group). Suicidal ideation is quite common among young people in Uganda, Botswana, Kenya, Zambia, and Nigeria (Swahn et al., 2012).

A person's psychological state has a significant influence on whether or not they may have suicidal thoughts. Medical students have a greater incidence of anxiety, depression, and psychological distress.



These conditions deteriorate with the start of medical school and increase throughout the course of the academic year (Rau, 2013). Medical doctors are one of the vulnerable demographics for suicide. It looks like during medical school, this issue becomes more apparent. In the early year of study, medical students' rates of psychological morbidity are comparable to those of the age-matched general population, but as they advance through their courses, their mental health deteriorates.

Suicidal ideation is a powerful determinant of attempted suicide, in addition to depression. Suicidal ideation is the act of contemplating, preparing, or thinking about suicide. Medical students' rates of suicide ideation range substantially from 6.0% to 43.0%. Medical students are susceptible to suicidal thoughts due to a variety of reasons, including emotional and professional anguish. These encompass knowledge overload, a lack of free time, debt, distance from home, a heavy workload in school, and pressure at work. In one of the studies, researchers found that 11% of medical students committed suicide due to their demanding schedules, indicating a high risk for suicidal thoughts and behaviors compared to the general population. This highlights the need for more time for rest, relaxation, and entertainment for medical professionals and students (Akram et al., 2018).

American Psychological Association (APA) 2018 defines suicidal ideation as “thoughts or obsessions with committing suicide, frequently as a sign of a severe depressive episode. The majority of suicidal thoughts do not result in a suicide attempt.”

According to a study carried out in Abbottabad, Pakistan, compared to non-medical students, medical students have higher levels of academic stress. The research was executed at many medical and non-medical colleges (Bibi et al., 2021). According to another cross-sectional study performed at the Lahore Medical and Dental College, female medical students are more prone than male students to experience depression and suicidal thoughts (Yousaf et al., 2016). The number of suicides among medical students in Pakistan has increased lately as a result of a number of causes, such as an inability to handle the demanding coursework, academic stress, exposure to suffering, and other health and psychological problems that intensify stress (Akram et al., 2018).

The literature has extensively examined the association between academic stress and suicidal thoughts. The incidence of suicidal ideation among medical students and the factors that influence it were the objectives of cross-sectional research conducted in a medical college in Western Nepal. Nearly 10% of participants in the study reported having suicidal ideation in the last year, and around 5% reported having suicidal ideation at some time in their life. Suicidal ideation was linked to underperformance in studies, engagement in clinical rotations, Substance misuse history, and emotional isolation from parents. Suicidal thoughts were most frequently attributed to family-related problems and, subsequently, self-related worries. The study highlights how crucial it is to identify and deal with students' suicidal thoughts in order to execute prompt interventions and manage the issue (Menezes et al., 2012).

Another exploratory research was carried out to investigate the various features of suicide fatalities among medical students, residents, and doctors in India over a ten-year period (2010–2019). The study's conclusions showed that marital problems among doctors and academic stress in medical students and residents were the main causes of suicide. (Chahal et al., 2021).

## Operational Definitions

**Academic Stress:** Academic stress is defined as the physiological reaction to academic responsibilities and challenges that surpass the student's adaptability.

**Suicidal Ideation:** Suicidal ideation is defined as thinking about taking your own life or wanting to attempt suicide.

## Statement of the Problem

The present study will be conducted to investigate the relationship between academic stress and suicidal ideation in medical students of the following medical colleges in Peshawar city:

1. Khyber Medical College (KMC)
2. Peshawar Medical College (PMC)

3. Pak International Medical College (PIMC)
4. Rehman Medical College (RMC)

### Objectives of the Study

The study aimed at achieving the following objectives:

1. To determine the prevalence of academic stress and suicidal ideation among medical students in Pakistan.
2. To find out the significant relationship between suicidal ideation and academic stress among medical students.
3. To determine whether female students exhibit a higher rate of suicidal ideation in comparison to male students.

### Hypotheses

The hypotheses of the research are:

**H<sub>1</sub>:** The prevalence of suicidal ideation and academic stress among medical students is high.

**H<sub>2</sub>:** There is a positive significant correlation between academic stress and suicidal ideation.

**H<sub>3</sub>:** Female students exhibit a higher rate of suicidal ideation as compared to male students.

**H<sub>0</sub>:** There is no significant correlation between academic stress and suicidal ideation.

### Rationale of the Study

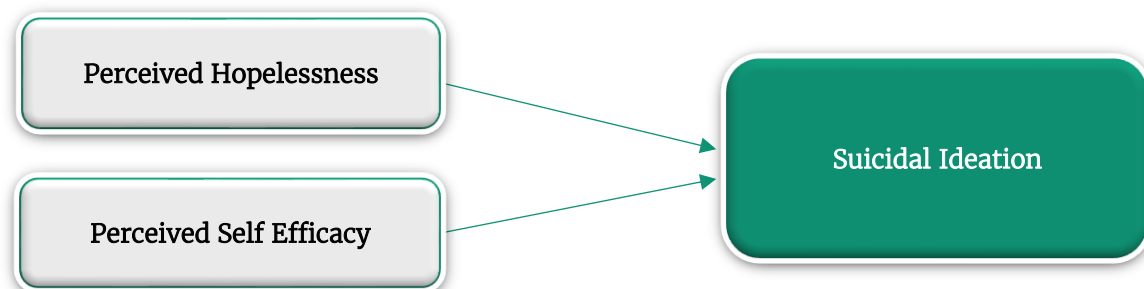
A study examining the relationship between suicidal thoughts and academic stress of medical students is important for a number of reasons. The specific demands that come with being a medical student, such as an intense academic burden and clinical obligations, can have a major impact on mental health. Medical students experienced a higher incidence of depression, anxiety, and stress, which highlights the need to confront mental health issues in this demographic. Mental health problems among medical students might have an impact on future patient treatment, in addition to their personal wellness. By gaining insight into the association between academic stress and suicidal thoughts, it is possible to determine possible dangers and develop focused treatments and support systems. The results of the research could be helpful in developing preventative measures and providing an additional perspective to the prior research studies on mental health in the medical field. It is a moral obligation to provide students aiming for healthcare professionals with top priority for their health. In a nutshell, this study tackles not only personal issues but also has comprehensive consequences for the healthcare system, directing intervening actions, modification in policies, and provision of support systems to improve the psychological well-being of aspiring healthcare workers.

### Conceptual Framework of the study

The current study aimed to explore the relationship between suicidal ideation and academic stress in medical students of targeted medical colleges in the city of Peshawar, Pakistan. Here in this study, academic stress is the independent variable, and suicidal ideation is the dependent variable, as indicated in the conceptual map and the map also shows the relationship between the two variables.

Figure 1

Conceptual Framework of the Study





## Methodology

### Research Design

The purpose of this quantitative study was to determine the link between two factors (suicidal ideation and academic stress) by measuring and analyzing numerical data. The co-relational research design was employed; in this method, researchers examine the statistical relationship between two or more variables without altering or modifying the variables. Suicidal ideation and academic stress are the variables in this case, and the researcher collected data on both to look for patterns or connections between the two. Academic stress is the independent variable, while suicidal ideation is the dependent variable.

### Population of the study

The population of the study was the medical students of the following four medical colleges of Peshawar:

- i. Khyber Medical College (KMC)
- ii. Peshawar Medical College (PMC)
- iii. Pak International Medical College (PIMC)
- iv. Rehman Medical College (RMC)

### Criteria for Selection of Population

The main aim of this research is to evaluate the relationship between academic stress and suicidal ideation among medical students. The population of medical students comprised both male and female students, with ages ranging from 19 to 24 years and academic year i.e. 2<sup>nd</sup> and 3<sup>rd</sup>.

### Sample

Simple random sampling technique was used for the selection of sample from three medical colleges of Peshawar city. The total sample size was 180 medical students. The data was collected from 90 males and 90 female students, with ages ranging from 19 to 24 years.

### Informed Consent

The participants were informed of the study's goal prior to receiving questionnaires to fill out, and they were then asked if they would be willing to answer closed-ended questions on the surveys. Additionally, the researcher assured them that the information gathered from their responses would be kept private and utilized exclusively for study.

### Instruments

#### Demographic information sheet

A personal demographic information sheet or form was utilized to collect information from the participants, such as age, gender, residence, current academic year, marital status, etc.

#### Perceived Stress Scale (PSS-10)

In 1983, Cohen and his colleagues developed the Perceived Stress Scale (PSS-10). This is a popular instrument for determining stress levels under erratic, unmanageable, and overburdened circumstances. The PSS-10 is a 5-point scale with ten items, each scoring 0 to 4 for perceived stress. The scale has six forward-scoring items and four reverse-scoring items (4, 5, 7, and 8 items) (Mozumder, 2022).

#### Suicidal Ideation Scale (SIS)

Rudd (1989) developed this 10-item scale as a diagnostic and assessment tool. It provides important information on the existence or non-existence of suicidal thoughts, the intensity of those thoughts, and the existence or non-existence of prior suicide attempts. The Likert-type scale used to evaluate the SIS ranges from 1 (never) to 5 (always), depending on the respondent's feelings and behaviours throughout the previous year (Fitriana et al., 2022).

## Results

### Data Analysis

The most recent version of the Statistical Package of Social Sciences (SPSS), version 26, was used to analyze the data. A Pearson Correlation was employed in the data analysis process to investigate and assess the correlation between academic stress and suicidal ideation. To ascertain if females demonstrate a greater degree of suicidal ideation than males, the T-test was also utilized. The results of the study on the relationship between medical students' suicidal ideation and academic stress were as follows.

**Table 1**

*Gender of the Respondents*

The gender of the respondents	Frequency	Percentage
Male	90	50
Female	90	50
Total	180	100

Note. Table 1 shows the gender of the respondents, frequency, and percentage. Total N=180 participants, 90 male and 90 female medical students participated in this research.

**Table 2**

*Age of the Respondents*

Age of the Respondents	Frequency	Percentage
19-20	29	16.1
21-22	92	51.1
23-24	59	32.8
Total	180	100

Table 2 displays the age, frequency, and percentage of the respondents. 16.1% of participants are between the ages of 19 and 20, 51.1% are between the ages of 21 and 22, and 32.8% are between the ages of 22 and 23, respectively.

**Table 3**

*Academic Year of the Respondents*

Academic Year of the Respondents	Frequency	Percentage
2 <sup>nd</sup> Year	83	46.1
3 <sup>rd</sup> Year	97	53.9
Total	180	100

Table 3 shows the academic year, frequency, and percentage of the respondents. 46.1% are the respondents of the medical second year, and 53.9% are the respondents of the medical third year.

**Table 4**

*Psychometric Properties of Scales*

Scale	M	SD	Range	Cronbach's $\alpha$
PSS-10	25.76	4.15	28.0	.738
SIS	22.13	4.26	25.0	.742

Table 4 shows the mean, standard deviation, range, and Cronbach's Alpha value of the Perceived Stress Scale and Suicidal Ideation Scale. The mean value of PSS-10 is 25.76, its standard deviation is 4.15, and the mean value of SIS is 22.13, and its standard deviation is 4.26. The range of PSS-10 is 28.0, and its Cronbach's Alpha value is .738, and the range of SIS is 25.0, and its Cronbach's Alpha value is .742

**Table 5**

Correlation between Academic Stress and Suicidal Ideation

	M	SD	1	2
PSS	25.76	4.15	-	.447*
SIS	22.13	4.26	.447*	-

\*\*. Correlation is significant.

Table 5 shows the Pearson Correlation between academic stress and suicidal ideation. The results show a positive and significant relationship between academic stress and suicidal ideation (.447\*), and the 2-tailed sign score is  $p < .01$ .

**Table 6**

Independent Sample t- Test Result

Variables	Male		Female		T(178)	P	Cohen's D
	M	SD	M	SD			
SIS	21.91	4.08	22.35	4.44	-.699	.136	0.103

Note. Table 6 shows the mean and standard deviation of the suicidal ideation scale among male and female participants, with values of t, p, and Cohen's D. Results indicated no significant mean difference for suicidal ideation across gender, i.e., Male (M=21.91, SD=4.08) and Female (M=22.35, SD=4.44) with  $t = -.699$  ( $p > 0.05$ ). Findings revealed that females do not exhibit higher suicidal ideation in comparison to males. The value of Cohen's D is 0.103 ( $< 0.5$ ), which indicates a small effect size.

## Discussion

The current study indicated that although the prevalence of suicidal ideation is determined to be significant, medical students endure a moderate level of academic stress. Furthermore, a strong positive relationship has been noticed between suicidal ideation and academic stress. Nonetheless, there is no significant difference between male and female students' suicidal ideation.

Fears of failing, family expectations, abrupt changes, test results, and batch rearrangement problems are common causes of suicide. Regardless of test results, parents should encourage and concentrate on their children's psychological well-being. Counseling should be offered by coaching institutes to weaker students, particularly those who are experiencing despair, anxiety related to their studies, or thoughts of suicide. Additionally, parents need to make sure their kids are always with them.

The current research intended to investigate the incidence of academic stress and suicidal ideation among medical students in Peshawar, Pakistan. It also sought to find out whether there is any significant relationship between medical students' academic stress and suicidal ideation. Furthermore, it focused on determining whether female students exhibit a higher rate of suicidal ideation in comparison to male students. Ultimately, based on the findings and results, different interventions have been formulated to reduce academic stress and suicidal ideation for better mental well-being and academic performance. In this chapter, the results are rigorously discussed and interpreted. Each research hypothesis is addressed individually, and the significance of all findings is discussed accordingly. The results are then assembled to form a conclusion that comprises the limitations of the study, recommendations for specific intervention techniques, and guidance for further investigation.

The first research hypothesis stated that the incidence of medical students' academic stress and suicidal ideation is high. The findings were statistically significant, i.e., suicidal ideation was found to be severe in both male and female participants, as determined by the Rudd suggested scores, which state that a SIS total score of 15 or more indicates serious suicidal ideation (Luxton et al., 2011). However, both participants had a moderate level of academic stress based on the Perceived Stress Scale scores (Mozumder, 2022). The results are comparable to a research study that indicated that medical students are notably vulnerable to depression and suicidal ideation, primarily due to the academic stress they face. Another research found that medical students across all five academic years reported moderate levels of

stress, with female students reporting significantly greater levels than their male counterparts (Kumar et al., 2024).

This study's second research hypothesis was that there would be a statistically significant positive association between academic stress and suicidal ideation. The result obtained was statistically significant, showing a positive and significant relationship between academic stress and suicidal ideation. The results are similar to a research study that found a significant relationship between academic stress and suicidal ideation among students (Yadav & Srivastava, 2020). Another research similar to the existing study found that there is a significant positive correlation between academic stress and suicidal ideation, but a negative relationship exists between mental health and these variables (Banerjee & Chatterjee, 2016).

The third research hypothesis was that Female students had a greater prevalence of suicidal ideation than male students. The results indicated that there is not a significant gender disparity in the rate of suicidal ideation. In this study, female students exhibited a slightly higher rate of suicidal ideation in comparison to male students. However, this difference was not significant in nature. The results are similar to a research study that found no significant gender difference in suicidal ideation rates among students, but city dwellers reported higher rates compared to their rural counterparts. Place of residence also played a role (Al-Shawashereh, 2015).

### Limitations

This study was limited to the city of Peshawar which has limited the generalizability of the findings. Medical students in different cities or areas may have different experiences and stress levels for a variety of reasons, including different educational systems, cultural norms, and the availability of support networks.

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