

Relationship Between Life Stress And Academic Performance Among Higher Education Students In West Bengal

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Abstract

The purpose of this research was to explore the relationship between life stress and academic performance among higher education students in the state of West Bengal, India. A cross-sectional survey framework was used to conduct this study. A sample of 356 higher education students, including 184 undergraduate and 172 postgraduate students from different colleges and universities in West Bengal, was taken using a convenient sampling technique. Sheldon Cohen's Perceived Stress Scale (PSS -10) was employed to examine the stress levels of participants. The study found that 14.9% of the students (N = 53) showed low levels of stress, 73.9% of the students (N = 263) exhibited moderate levels of stress, and 11.2% (N = 40) of the students exhibited high levels of stress. Also, investigators found a very weak negative (-.127) and significant ($P < 0.05$) correlation between stress and academic performance. The study revealed a high level of perceived stress among higher education students. Therefore, it is necessary for students to learn how to deal with stress if they want to do better in their academic careers.

Keywords: Life stress, Academic performance, Higher education students, West Bengal.

Date of Submission: 15-05-2023

Date of Acceptance: 25-05-2023

I. Introduction

Stress is a common experience for many students, especially those striving for academic excellence. In today's world, students experience stress from different sources, such as pressure from academic expectations, academic workloads, relationships, and social pressures. There are various ways in which stress can impact students' academic performance. Also, academic performance can be a predictor of mental stress in students. Several factors contribute to the relationship between academic performance and mental stress, including Poor academic performance: students who struggle academically may experience greater mental stress due to feelings of inadequacy or frustration (Macan et al., 1990). They may worry about college admissions, job chances, or social expectations. Fear of failure: academic failure can cause mental stress in students. This fear may come from personal insecurities, external pressures, or past negative experiences. High expectations and high demands from parents, teachers, and students can cause mental stress. High achievers may stress and worry about their academic success. Whatever the sources of stress, they can vary greatly from student to student. Several studies identified that stress was linked to lower academic performance. However, the effects of stress on academic performance can have both positive and negative outcomes. Moderate levels of stress can make people more motivated, help them focus, and help them learn (Fevre et al., 2003). Yerkes and Dodson (1908) proposed the Theory of Arousal, which states that performance improves with stress up to a particular extent but declines beyond that point due to excessive stress (Cohen, 2011).

Ronald (2018), on the other hand, surveyed students in higher education to see whether or not stress had a negative effect on their grades. A small negative correlation was what he discovered. A similar study was conducted by Ponselvakumar and Alaguraja (2022) with 168 students from various arts and science colleges in Tamil Nadu to determine the extent to which students' academic performance is impacted by stress. A decrease in academic performance was found to be associated with increased levels of perceived stress. Another study that looked at how stress affected academic performance among first-year students at Putra Malaysia was conducted by Elias et al. (2011). The study showed that stress affects academic performance. Azila-Gbettor et al. (2015) looked at how stress affects academic performance in different ways. The results showed that stress does not affect academic performance. In another study, Keshi and Basavarajappa (2011) reported that aggression, depression,

and poor academic performance are all significantly linked to academic stress. Cheng and Catling (2015) found that resilience, delaying gratification, and stress were not good predictors of students' academic success.

Chronic or excessive stress can cause undesirable outcomes like poor performance, burnout, life situations, and mental health problems. This may result in panic attacks, depressive disorders, and other behavioral problems, which can hinder the normal life of students and, side by side, affect their academic performance (Lee et al., 2015). In order to promote individual and societal well-being, enhance academic performance, and establish supportive educational environments, research on stress, and its' coping strategy is essential.

II. Rationale of the study

In the contemporary world, stress is prevalent among higher education students worldwide. Multiple factors, including academic pressure (Deb et al., 2015), financial concerns (Andrews & Wilding, 2004), social pressures, and the transition to adulthood, can contribute to excessive stress among higher education students. This can manifest in a variety of ways, including concentration difficulties, sleep disturbances (Schlarb et al., 2017), and physical symptoms like headaches or tiredness (Martin, 2016). Stress can impact academic performance, mental health, physical health, time management, and burnout in students (Allen et al., 2021). In addition, high levels of stress can impair cognitive abilities such as memory, focus, and problem-solving, which are essential for academic success (McEwen & Sapolsky, 1995). This research examines both undergraduate and postgraduate-level students in higher education. A student's transition from adolescence to early adulthood generally coincides with their entry into higher education. There is a risk of stress as they deal with the demands of adulthood, including duties, work, relationships, and the development of a sense of self. This period is difficult for higher-education students because they must juggle a heavy academic workload with other responsibilities, such as part-time jobs, adjusting to different life situations, finding a new job, and family obligations. These are the mental stressors that can adversely affect academic performance. The researchers reviewed five Indian studies and fifteen international studies on stress and academic performance. The researchers have identified a dearth of empirical studies on stress and academic performance in West Bengal although it is a major concern in school education and a leading cause of adolescents' and early adults' depression and suicide. Therefore, in view of the earlier literature studies, the researchers became curious to know stress levels and their relationship to academic performance among West Bengal's higher education students.

III. Research questions

Considering the nature of the inquiry, researchers came up with the following questions as following:

- How much life stress is prevalent among higher education students in West Bengal?
- How does life stress relate to the academic performance of higher education students in West Bengal?

IV. Delimitation

Due to resource constraints, the current study is delimited to the following:

- Students enrolled in higher education only at the undergraduate and postgraduate levels were chosen.
- Only 356 students were chosen to serve as a representative sample of the entire population.
- The stream was delimited to arts, science, and engineering.
- Personal indicators were delimited to gender, course, and stream.
- Only regular-mode students were studied.

V. Objectives of the study

Keeping in mind the delimitation of the study, the researchers came up with the following research objectives:

1. To assess the current state of stress levels among higher education students in West Bengal.
2. To observe the present status of existing stress levels among higher education students with respect to their gender in West Bengal
3. To observe the present status of existing stress levels among higher education students with respect to their courses in West Bengal.
4. To observe the present status of existing stress levels among higher education students with respect to their stream in West Bengal.
5. To observe the present status of existing stress levels among higher education students concerning their level of academic performance in West Bengal.
6. To investigate the correlation between stress and academic performance among higher education students in West Bengal.

VI. Hypotheses of the Study

Based on previous studies, hypotheses are always made. To reach the objectives of this study, the following hypotheses were made:

- H₀₁:** There is no significant variation in stress levels among higher education students in West Bengal when gender is concerned.
- H₀₂:** There is no significant variation in stress levels among higher education students when the course is concerned.
- H₀₃:** There is no significant difference in stress levels among higher education students when the stream is concerned.
- H₀₄:** There is no significant difference in stress levels among higher education students when the levels of academic performance are concerned.
- H₀₅:** There is no significant relationship between stress and the academic performance of higher education students in West Bengal.
- H₀₆:** Academic performance does not significantly predict the stress of higher education students in West Bengal.

VII. Methods

A cross-sectional survey design was employed to fulfill the goal of this research, where the researchers used quantitative measures to discover the current status of stress in higher education learners and its relationship to academic performance. All the undergraduate and postgraduate students of higher education (nearly 19 lakhs) in West Bengal are the target population and therefore, using power analysis formula, the required sample size is 385. A sample of 356 students from numerous colleges and universities in West Bengal, including 184 undergraduates and 172 postgraduate students, was chosen using a convenient sampling method. The perceived stress scale (PSS) was utilized to assess stress levels in higher education learners. There are only 10 items on this standardized scale developed by Sheldon Cohen. In addition, the percentage of total marks obtained on the examination was used to determine a student's overall academic performance. Both offline and online methods were used to collect information from participants. The following dependent and independent variables were used within the scope of this investigation: Variables such as gender, level, stream, and academic performance are independent. Stress is the dependent variable in this study.

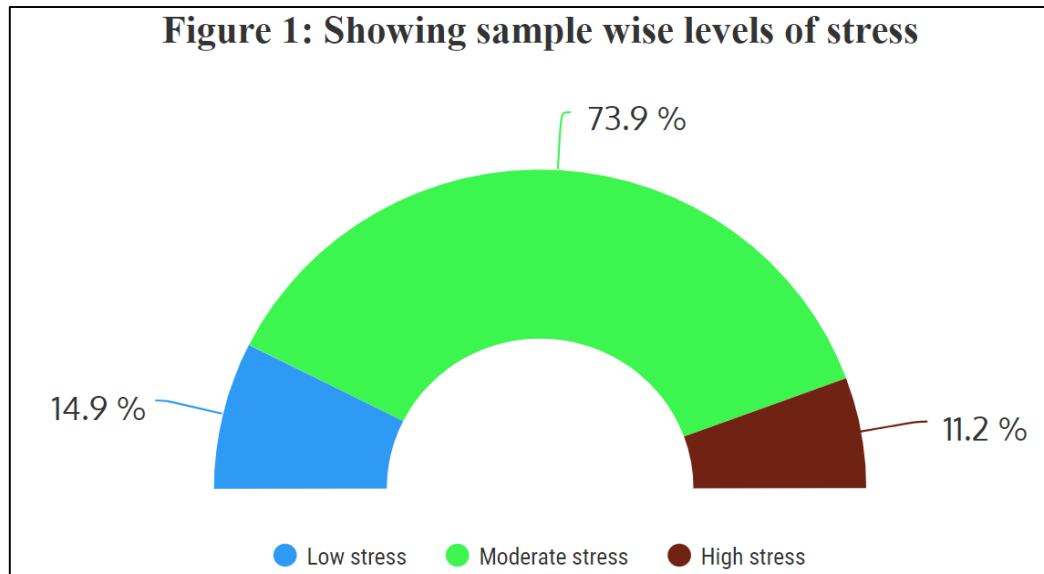
VIII. Descriptive statistics

The research included responses from 356 students in West Bengal who were enrolled in higher education at different levels, including undergraduate and postgraduate programs. Out of the 356 samples, 184 were from undergraduate students and 172 were from postgraduate students. There were 182 male and 174 female students. Descriptive statistics and visual representations were utilized to depict the stress levels of higher education pupils in West Bengal. According to the data collection tool, 14.9% of the students (N=53) exhibited low-stress levels, 73.9% showed moderate stress levels, and 11.2% showed high-stress levels.

Table 1: Showing the sample-wise levels of stress

Stress levels	Low stress	<i>Count</i>	53
		<i>Percentage</i>	14.9%
	Moderate stress	<i>Count</i>	263
		<i>Percentage</i>	73.9%
	High perceived stress	<i>Count</i>	40
		<i>Percentage</i>	11.2%

For better understanding, researchers made a half-pie chart to show the levels of stress such as low, moderate, and high perceived stress.



Hypothesis testing

Inferential statistics were computed so that conclusions could be drawn about the population of students pursuing higher education in West Bengal. The analyses consist of the Chi-square test, Pearson correlation coefficient, and regression analysis. The IBM SPSS-20 software was used to perform all of the calculations and produce the graphical representations. Pearson's chi-square test was used to perceive if there was any statistically significant difference between stress levels and several independent variables, such as gender, course, stream, and academic performance levels.

Table 2: Chi-square test of independence between the Levels of stress & Variables

Null Hypothesis	Variables	Category	N	X ²	df	Asymp. Sig. (2-sided)	Remarks	Hypothesis Testing (Null/H ⁰) (0.05 level)
H ₀₁	Gender	Male	182	2.296	2	.317	NS P>0.05	Fail to reject
		Female	174					
H ₀₂	Course	UG	184	6.128	2	.047*	* P<0.05	Rejected
		PG	172					
H ₀₃	Stream	Arts	290	4.971	4	.290	NS P>0.05	Fail to reject
		Science	50					
		Engineering	16					
H ₀₄	Academic Performance levels	Poor	14	11.023	6	.088	NS P>0.05	Fail to reject
		Satisfactory	49					
		Good	163					
		Very good	130					

Note: *= Significant at the 0.05 level (2-tailed), NS = Not Significant at the 0.05 level (2-tailed).

Moreover, the findings are as detailed below:

- **Hypothesis 1:** The researchers were not successful in rejecting the null hypothesis because the value of P was greater than 0.05. Table 1, exhibits that $\chi^2 = 2.296$ and $P = .317$.
- **Hypothesis 2:** The data in the table revealed that $\chi^2 = 6.128$ and $P = .047$; consequently, the researchers concluded that the null hypothesis could not be supported because P was less than 0.05. Therefore, it is reasonable to conclude that the stress levels of college students vary considerably from course to course.
- **Hypothesis 3:** According to the data presented in the table above, $\chi^2 = 4.971$ and $P = .290$; therefore, the researchers were unable to reject the null hypothesis because $P > 0.05$. As a result, it makes sense to infer that, when taking into account the various streams, there is no significant variation in the levels of stress that students in higher education experience.
- **Hypothesis 4:** The above table showed that $\chi^2 = 11.023$ and $P = .088$, so the researchers were unable to reject the null hypothesis because P was greater than 0.05. Therefore, it is reasonable to conclude that

there is not a significant variation in the stress that is experienced by students in higher education when the level of academic performance is taken into consideration.

Hypothesis 5: This hypothesis was tested using the Pearson correlation coefficient. Where Table 3 exhibits, the value of r is $-.127$ and the value of P is $.017$; therefore, the researcher rejected the null hypothesis because P is less than 0.05 .

Table 3: Pearson correlation between Stress and Academic performance

N	Correlation coefficient	Asymp. Sig. (2-sided)	Remarks	Hypothesis Testing (Null/H ₀) (0.05 level)
356	$-.127$	$.017^*$	Significant P<0.05	Null Hypothesis is rejected

As a consequence of this, it is reasonable to draw the conclusion that stress has a negative relationship with academic performance which is relatively weak, and significant.

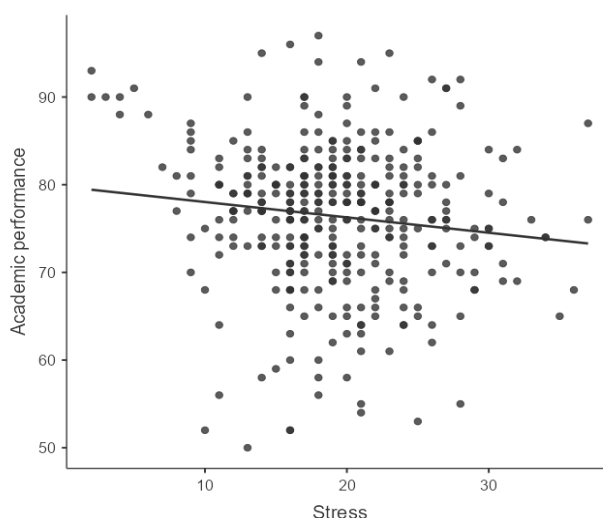
Hypothesis 6: A regression analysis was carried out to determine the degree to which academic performance can significantly predict stress. Table 4 shows that academic performance significantly predicted stress, which means that the null hypothesis cannot be supported ($F(1, 354) = 5.781, P < 0.05$). This indicates that academic performance can play a significant role in predicting stress ($b = -.127, P < 0.05$). These results clearly point to the negative effect of academic performance. In addition, the model explains 1.6% of the variance in stress, as shown by the R^2 value of $.016$, which was calculated earlier.

So, it seems reasonable to say that if we could raise the scores for academic performance by one standard deviation, the scores for stress would likely drop by $.12$ units of the standard deviation.

Table 4: Regression analysis

Model Summary ^b						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	$.127^a$	$.016$	$.013$	5.933		
a. Predictors: (Constant), Academic performance score						
b. Dependent variable: Total score of stress						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	203.526	1	203.526	5.781	$.017^b$
	Residual	12462.699	354	35.205		
	Total	12666.225	355			
a. Dependent variable: Total score of stress						
b. Predictors: Academic performance score						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.262	2.930		8.964	$.000$
	Academic performance score	$-.092$	$.038$	$-.127$	-2.404	$.017$
a. Dependent variable: Total score of stress						

Figure 2: Scatter plot presenting Academic performance scores and stress scores



IX. Results

Each of the two research questions was verified in relation to the findings.

- Research Question 1: What is the current status of life stress among higher education students in West Bengal?

Analysis of the perceived stress scale revealed that 14.9% of the students (N=53) showed low levels of stress, 73.9% of the students (N= 263) showed moderate levels of stress, and 11.2% (N= 40) students showed high-stress levels.

- Research Question 2: How does life stress relate to the academic performance of higher education students in West Bengal?

Students at different colleges and universities reported different levels of stress. Researchers used the Pearson correlation coefficient and regression analysis to determine the relationship between life stress and academic performance. They found that there is a significant negative correlation between stress and the academic performance of higher education students in West Bengal.

X. Conclusion

The purpose of this research was to investigate the level of stress and how it relates to one's overall academic performance. Additionally, it examined the relationship between stress levels and a number of independent variables, including gender, course, stream, and academic performance levels. A total of 356 students were selected randomly from a variety of educational institutions located in the state of West Bengal. It is possible that educators, counselors, and psychologists could be assisted in the design and development of appropriate intervention programs to overcome mental health-related problems among learners. The students participating in the study might find that it's beneficial to them. In this study, researchers found a very weak negative (-.127) and significant ($P < 0.05$) correlation within stress and academic performance. According to the findings of the study, one can draw the conclusion that higher levels of stress will result in worse academic performance. When it comes to the subject matter of the course, students in institutions of higher education experience significantly varying levels of stress. The perceived stress scale analysis revealed that 11.2% of students had high levels of perceived stress, which educational organizations should take into consideration. In order to prevent students from becoming overly stressed and having their academic performance suffer as a result, colleges and universities should implement measures to track student stress levels and provide programs for handling stress, mindfulness exercises, and counseling services.

As a cross-sectional study, nevertheless, it is unable to measure changes in variables over time. Therefore, there is a chance that circumstances could alter over the course of the student's life. Furthermore, in this quantitative study, questions and possible answers were predetermined. Therefore, future research in this area should take into account using a qualitative design on a longitudinal basis to pinpoint specific stressors and coping mechanisms among higher education students.

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