

Students' Perception of Stress and Its Effect on Academic Performance: A Survey of Students in the Federal Polytechnic Ado-Ekiti, Nigeria

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ABSTRACT

This study investigates the perception of stress and its impact on the academic performance of students at the Federal Polytechnic, Ado-Ekiti, Nigeria. Employing a descriptive survey research design, data were collected from 200 students using a structured questionnaire through the convenience sampling method. The data were analyzed using both descriptive statistics and the Chi-square test of independence. The findings are, firstly, that there is a statistically significant relationship between gender and stress levels, with 71, 33, and 11 female students reporting high, moderate, and low stress levels, respectively, while 39, 28, and 18 male students reported high, moderate, and low stress levels, respectively, compared to their female counterparts. Secondly, the study found that there is no significant relationship between gender and academic performance, indicating that male and female students perform at similar levels despite differences in stress. The study concludes that while stress is a significant and gendered experience, it does not necessarily translate into a gendered academic outcome.

Keywords— Stress, Perception, Chi-Square, Academic Performance, Descriptive Survey

I. INTRODUCTION

A country's social, economic, and intellectual progress is greatly influenced by its educational system. Students must fulfill a variety of academic requirements within the educational system, which frequently include tight deadlines, ongoing evaluations, tests, and high expectations from educators, parents, and the general public. Numerous internal and external factors affect students' capacity to effectively handle these academic expectations. According to [1], stress has become an unavoidable aspect of the learning environment and is one of the biggest issues facing students worldwide.

Students frequently experience stress when social and intellectual expectations are greater than their capacity to cope. Many students are exposed to many types of stress that either directly or indirectly affect

their academic performance due to the contemporary academic environment, financial hardship, transportation challenges, and subpar housing [2]. Stress, according to [3], is a physiological and psychological response that occurs when a person believes that the demands of their surroundings are greater than the resources available to meet those expectations. Stress and academic performance among Pakistani undergraduates were found to be significantly negatively correlated by [3]. Academic overload, examinations, peer pressure, social expectations, unfavorable learning environments, and time constraints are just a few of the stressors that students in higher education must deal with.

According to [4], students in Nigeria frequently face additional stress related to financial difficulties, limited housing facilities, transportation issues, and overcrowded classrooms due to the country's rising cost of living and educational expenses. Students' mental health, focus, attendance, and ultimately their academic achievement can all be impacted by these circumstances. People's perceptions have a significant impact on how stress affects them. Stress, according to [4], is not only about external pressure but also about how the individual interprets or evaluates that pressure. According to [5], students who are under a lot of stress often lose motivation, have trouble focusing, and perform below their capabilities in class and on tests. Four main sources of stress are commonly found among students in the majority of tertiary institutions: financial stress, academic stress, transportation stress, and housing stress. [5] found that academic stress impairs students' ability to focus, manage their time, and enjoy their free time. Students' stress levels differ based on their coping strategies, social background, and personality. While extreme stress leads to anxiety, exhaustion, depression, and poor academic results, moderate stress can boost motivation and focus [6].

The combination of these pressures, particularly academic overload and financial difficulty, has a negative impact on students' motivation, attendance, and performance, according to a study by [7]. As a result, knowing the many causes of student stress makes it easier to pinpoint the crucial areas that need to be addressed. When compared to students who efficiently handle stress or encounter fewer stressful situations, those who experience several overlapping stressors typically perform poorly.

Numerous studies have examined the relationship between stress and academic performance, such as [8], [9], and [10], with the majority of the results showing that high levels of stress have an impact on students' academic performance. In a similar vein, [11] discovered that Nigerian students who are under academic and economic strain have lower GPAs and less motivation. Stress interferes with cognitive functions such as memory, reasoning, and decision-making, which has an impact on academic achievement.

Students' academic performance is a major indicator of the quality and effectiveness of an educational system. However, in recent years, there has been a growing concern about the increasing level of stress experienced by students in tertiary institutions. Students face numerous challenges psychological and emotional stress which negatively affect academic performance. Despite the recognition that stress is a part of student life, there is limited empirical evidence showing how the different sources of stress influence students' academic performance. Furthermore, students' personal perceptions of how stress affects their learning and achievement are often overlooked.

This study therefore seeks to bridge this gap by examining students' perception of stress and how it impacts their academic performance. The objectives of the study are to determine if there is relationship between gender and students' category of stress, and to determine if there is relationship between students' stress levels and their academic performance.

II. MATERIALS AND METHODS

A. Sampling Technique and Sample Size

A convenience sampling method was adopted for this study, chosen for its practicality given the time constraints and ease of access to participants. A total of 200 students were selected, a sample size considered reasonable and standard for this type of survey.

B. Research Instrument and Data Collection

Data were collected using a structured questionnaire comprising 20 items in total: 6 items on a 4-point Likert scale (strongly agree, agree, disagree, strongly disagree) and 14 additional items. The 200 questionnaires were administered to both male and female students in the School of Pure and Applied Sciences. Table 1 and Figure 1 show the educational level and gender distribution of the respondents while Table 2 and Figure 2 show the age and gender distribution of the respondents.

Table1: Educational Level and Gender Distribution of the Respondent

EDUCATION LEVEL	FEMALE	MALE	TOTAL
HND I	28	36	64
HND II	40	21	61
ND I	17	18	35
ND II	30	10	40
TOTAL	115	85	200

Table 2: Age group and Gender Distribution of the Respondent

AGE GROUP	FEMALE	MALE	TOTAL
16-20	28	12	40
21-25	31	42	73
26-30	47	24	71
30 above	9	7	16
TOTAL	115	85	200

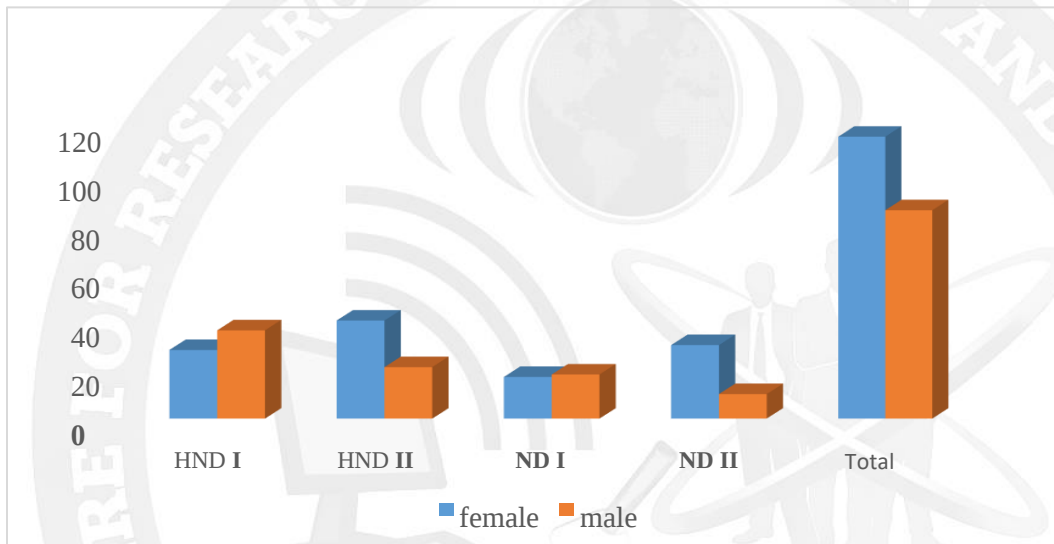


Figure 1: Distribution of educational level of the respondents by gender

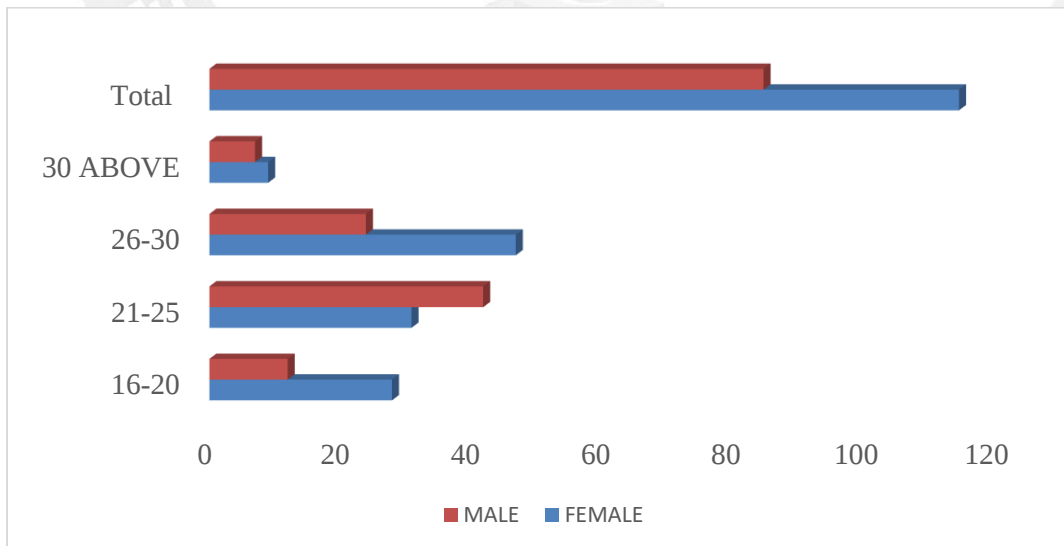


Figure 2: Distribution of age group of the respondents by gender

C. Classification of Stress Levels

Stress levels were categorized into three groups, as presented in Table 3:

- Low stress — transportation stress only
- Moderate stress — academic, transportation, and housing stress
- High stress — academic, transportation, housing, financial, and other stress factors

Academic performance was categorized based on grade point average, as shown in Table 4.

D. Chi-Square Test

The Chi-Square test, a statistical method for examining relationships between categorical variables, was used to determine whether the observed distribution of data differed significantly from the expected distribution. This test is commonly applied to assess the independence of two variables or to evaluate how well an observed data pattern fits a theoretical distribution. It works by comparing observed data against the values expected under the assumption that the null hypothesis is true. The chi-square statistic was calculated using the formula:

$$\chi^2_{cal} = \sum_{i=1}^n \sum_{j=1}^m \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \quad (1)$$

Where: O_{ij} = observed frequency (actual number of students in each category)

E_{ij} = expected frequency (the count anticipated if no relationship existed between the variables)

Expected frequencies are calculated based on the assumption that the null hypothesis is true. They can be determined using the formula:

$$E_{ij} = \frac{\text{Row Total} \times \text{Column Total}}{\text{Grand Total}} \quad (2)$$

Table 3: Gender and Category of Stress

CATEGORY OF STRESS	GENDER		TOTAL
	MALE	FEMALE	
LOW	19	11	30
MODERATE	27	33	60
HIGH	39	71	110
TOTAL	85	115	200

Table 4: Stress Levels and Academic Performance Categories

ACADEMIC PERFORMANCE CATEGORY	STRESS LEVEL		TOTAL
	NO	YES	
PROBATION	5	10	15
PASS-CREDIT	18	33	51
LOWER-CREDIT	35	40	75
UPPER-CREDIT	20	26	46
DISTINCTION-CREDIT	7	6	13
TOTAL	85	115	200

III. RESULTS

A. Relationship between Gender and Stress Category

Table 5 shows the result of Chi-Square test for examining the relationship between gender and category of stress among the students surveyed. The result yielded a Pearson Chi-Square value of 7.716 (df = 2, p = 0.02111). The decision rule was to reject null hypothesis (H₀) if p-value is less than α -value (0.05), otherwise, it will not be rejected. Since the p-value is less than the α -value of 0.05, the null hypothesis (H₀) was therefore rejected. This indicates a statistically significant relationship between gender and category of stress among the students.

B. Relationship between Stress Level and Academic Performance

Table 6 presents the Chi-Square test result examining the relationship between students' stress levels and their academic performance categories. The analysis produced a Pearson Chi-Square value of 2.835 (df = 4, p = 0.585792). The decision rule was to reject null hypothesis (H₀) if p-value is less than α -value (0.05), otherwise, it will not be rejected. Since the p-value (0.585792) is greater than the α -value of 0.05, there was insufficient evidence to reject the null hypothesis. This suggests that no statistically significant relationship exists between students' stress levels and their academic performance category.

Table 5: Chi-square Result for Relationship between Gender and Stress Category

	Chi-Square Tests		
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.716035	2	0.02111

Table 6: Chi-square Result for Relationship between Stress Levels and Academic Performance Category

	Chi-Square Tests		
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.835086	4	0.585792

IV. DISCUSSION

A. Gender Differences in Stress Category

Figure 3 revealed that female students reported higher levels of stress than their male counterparts in both the moderate and high stress categories. This pattern suggests that female students may respond more intensely, on a psychological level, to demanding academic circumstances such as heavy lecture loads, examinations, and financial difficulties. This observation aligns with the view of [3], who noted that psychological and physiological stress responses are triggered when an individual perceives that the demands placed on them exceed the resources available to meet those demands.

This trend was further supported by the Chi-Square test presented in Table 5, which showed a p-value of 0.02111 which is below the significance threshold of $\alpha = 0.05$. On this basis, the null hypothesis was rejected, confirming a statistically significant relationship between gender and students' stress category. This finding indicates that stress is shaped not only by external demands but also by how individuals perceive and interpret those demands. This view is consistent with [4], who emphasized that individual perception plays a substantial role in how stress is experienced.

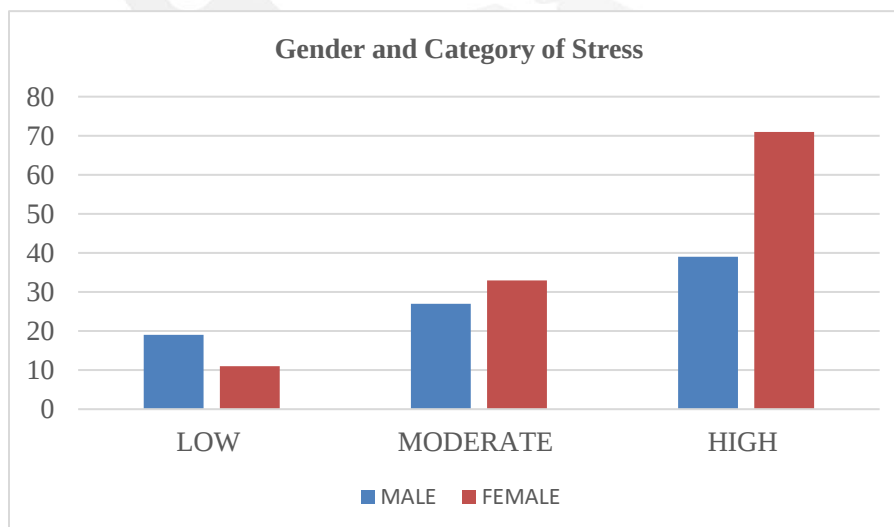


Figure 3: Gender differences in stress category

B. Stress Level and Academic Performance

As shown in Table 6, the Chi-Square result produced a p-value of 0.585792, which exceeds the significance threshold of $\alpha = 0.05$. There was therefore insufficient evidence to reject the null hypothesis, indicating no statistically significant relationship between students' stress levels and their academic performance category. This suggests that, within this study, the intensity of stress experienced by students did not correspond to measurable differences in academic outcomes. This result is consistent with the position of [3], who reported a significant negative correlation between stress and academic performance in a broader sense, but it diverges from the findings of [8], [9], and [10], whose studies largely concluded that elevated stress levels have a measurable impact on students' academic performance.

V. CONCLUSION

The study is on students' perception of stress and its effect on academic performance, a case study of Federal Polytechnic Ado-Ekiti. It determined if there exist any relationship first between gender and students' category of stress and also between students' stress levels and their academic performance category. The outcome of first hypothesis says that gender is related to student" category of stress; the outcome for second hypothesis says that stress level does not relate to academic performance category. Also, female students experience higher levels of stress compared to male students which implies there is relationship between gender and stress. Students should manage stress psychologically in order not to shift their focus for better academic performance no matter the level of stress. Although 200 samples were selected which is small compared to students' population but for future research larger population using all the faculty is recommended.

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