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Unraveling The Strain: Examining The Relation Among Perceived Stress and Undergraduate's Educational Achievement

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Abstract

Background: This study investigates the relationship between perceived stress and educational performance among undergraduate students (a topic of growing concern in academic psychology). The current study addresses the gap in understanding whether perceived stress has a measurable effect on students' academic achievement within a specific institutional context.

Aim: The primary objective was to examine whether a statistically significant relationship exists between perceived stress and educational performance among undergraduate students. Specifically, the study tested the hypothesis that higher levels of perceived stress would correlate with changes (either positive or negative) in academic performance.

Method: A descriptive, correlational design was used, involving a sample of 100 undergraduate students aged 18–25 from Galgotias University. Data were collected via the Levenstein Perceived Stress Questionnaire, known for high internal consistency ($\alpha = 0.90–0.92$). Educational performance was measured through changes in academic percentages from 2021–22 to 2022–23. Pearson's Product Moment Correlation was used to analyze the relationship, with a significance threshold set at $p < 0.05$.

Result: The correlation coefficient ($r = 0.058659$) fell below the critical value (0.205), indicating no significant relationship between perceived stress levels and academic performance. This result supports the null hypothesis and contradicts much of the prior literature suggesting a detrimental effect of stress on academic outcomes.

Conclusion: The study concludes that perceived stress, as measured, does not significantly impact undergraduate academic performance in this sample. These finding challenges prevailing assumptions and suggests the need for further research incorporating moderating variables like

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resilience, coping mechanisms, and institutional support. Despite its limitations such as a single-site sample and reliance on self-reported data, the study contributes important nuance to the discussion on student mental health and educational success.

Keywords: *Perceived Stress, Educational Performance, Undergraduate Students, Academic Achievement, Stress Questionnaire, Pearson Correlation*

Introduction

Perceived stress is the subjective evaluation of the pressures and demands faced by an individual. Numerous studies, such as those by Verma and Gupta (1990) and Wen (2010), have underscored the prevalence of perceived stress among students. The pursuit of educational excellence, meeting deadlines, and excelling in exams are common stressors experienced by students. Perceived educational stress encompasses the psychological and emotional responses elicited by educational demands and challenges. Research indicates that educational stress is pervasive among students, often exacerbated by high expectations, rigorous schedules, and competitive environments.

Concerning advanced educational institutions like universities, where students contend with stringent time constraints and demanding educational assessments, stress becomes a prevalent issue (Smith et al., 2000). Symptomsof stress, including loss of energy, elevated blood pressure, mood disturbances, difficulty concentrating, impatience, nervousness, and tension, have been well-documented by researchers (Malach-Pines and Keenan, 2007; Ongori, 2007; Agolla and Ongori, 2009; Agolla, 2009).

The person-environment model, proposed by Misra and McKean (2000), provides valuable perspectives for comprehending college stress. According to this model, individuals interpret stressful events as either challenging or threatening. Engaging in educational pursuits can induce stress, which, when perceivedas challenging, fosters a feeling of competence and enhances learning abilities. However, viewing education as a threat can lead to feelings of hopelessness and a diminished sense of educational performance.

Review of Literature

Various researchers have investigated the intricate relationship among stress and educational performance. Verma and Gupta (1990) revealed that heightened educational stress can detrimentally affect students' educational outcomes, resulting in decreased grades and overall performance. Similarly, Anderson et al. (2005) identified stress causing agents such as grade repetition as negatively affecting educational achievement. Educational workload emerges as the most predominant stressors within students, with recent studies by Thomas and Davis (2022) highlighting a significant relation among educational stress and diminished educational performance. Agents such as heavy course loads, tight deadlines, and educational pressure contribute to fatigue and impede students' capability to thrive educationalally. Contrary to the misconception that stress can enhance educational performance, research, including that by Weidner et al. (1996), has consistently displayed that too much of educational stress can impair concentration, memory, and overall educational performance, causing lower grades.

The psychological consequences of educational stress can be profound. High stress can cause symptoms of anxiety and depression, which ultimately affects a student's ability to concentrate, study effectively, and pass exams (Petro, 2008). This can create a vicious cycle where poor educational performance increases stress. Psychological well-being encompasses a person's mental state, including emotional stability, life satisfaction, and freedom from significant stress. According to (Swami et al.,2006) emphasize the importance of psychological health as it relates to general mentalhealth. Multiple studies have elucidated that educational stress is related to psychological distress, including manifestations of anxiety and depression. These emotional reactions

can further affect cognitive functioning and lead to learning disabilities (Connor, 2005).

Schools and institutions play a key role in mitigating the affect of stress on educational performance. (Campbell et al.,1994) emphasize the importance of creating a supportive and nurturing environment, implementing stress reduction programs, and promoting a healthy work-life balance for students. Colleges anduniversities have recognized the need for intervention and support services. Recent research (Gomez and Anderson, 2022) emphasizes the importance of educational support centers, counseling services, and stress management programs to help students deal with stressors and achieve educational success.

High expectations, whether self-imposed or motivated byexternal factors, are considered a common source of educational stress among college students. Fear of educational failure, studied by (Klassen et al.,2008), is another recurring theme. Students often put pressure on themselves to succeed, which causes stress when they perceive themselves as falling short of these expectations.

Hypothesis

H1: It is assumed that there will be a positive relation between students' perceived stress and their educational performance.

H0: It is assumed that there will be no relation between students' perceived stress and theireducational performance.

Method

Study Design

This study employed a basic descriptive and relational research design to search for the affect of perceived stress on students' educational achievement. Utilizing a perceived stress questionnaire developed by Levenstein and colleagues, the research aimed to explore the relation between perceived stress degrees and educational performance among undergraduate students. A non-experimental relation study designwas utilized, focusing on elucidating the association between perceived stress and educational achievement without manipulating any variables.

Participants

A sample of 100 undergraduate students enrolled in the School of Liberal Education at Galgotias University, Greater Noida, India, aged between 18 and 25, was randomly chosen for representation in this study. Data was collected using simple random sampling method.

Tools Used

To address this researchproblem, data was gathered using the Perceived Stress Questionnaire, a 30 items , reliable instrument developed by Levenstein and colleagues, boasting internal consistency ranging from 0.90 to 0.92 and a test-retest reliability of 0.82.

Procedure

All participants were given a thorough explanation of the study's objectives before providing their consent. Participants were assured of the confidentiality and voluntary nature of their participation. Data collection involved administering a perceived stress questionnaire to the participants. Clear instructions were provided to ensure consistent understanding, and the questionnaire was made to gather information on participants' perceived stress degrees. Data collection was facilitated by the researcher through physical interaction and the utilization of a Google form for data entry. Additionally, the researcher conducted interviews to gather supplementary information like gender, age, and educational performance in previous years.

Ethical Considerations

Participants were fully informed about the study's purpose, procedures, and their rights, including the right to withdraw at any time without penalty. Informed consent was obtained from all participants, emphasizing the voluntary nature of their involvement. To maintain confidentiality, all data were anonymized, and personal identifiers were removed. The researchers ensured that the data collected were used solely for academic purposes and stored securely to prevent unauthorized access. These measures underscore the study's commitment to ethical research practices, safeguarding participant welfare and data integrity.

Data Analysis

To analyze the relation among perceived stress degrees and educational performance, scores were calculated for every participant based on their responses to the perceived stress questionnaire. The assigned weights based on the questionnaire's scoring method were utilized to calculate the total score. Educational performance was determined by assessing the percentage difference between educational years. The Pearson product-moment coefficient of relation method was employed to quantify the relation between perceived stress degrees and educational performance. Significance testing was applied using the degrees of freedom 24 (df=98) and critical value (0.205) at a significance degree of 0.05. The computed relation coefficient (r) was weighed up to the critical value to ascertain the significance of the relationship.

Result

Presentation of Data

The study aimed to examine the relationship between perceived stress levels and academic performance among undergraduate students. Pearson's product-moment correlation coefficient was employed to analyze the relationship between scores on the perceived stress questionnaire and academic performance across two academic years (2021–2022 and 2022–2023). The results revealed a correlation coefficient (r) of 0.058659, which is below the critical value of 0.205 at a 0.05 significance level (df = 98). This finding leads to the acceptance of the null hypothesis, indicating no significant relationship between perceived stress and educational performance.

Descriptive Statistics

The sample consisted of 100 students aged 18–25 years. Age and gender were evenly distributed, with 50% male and 50% female respondents. Educational performance was calculated as the difference in percentage scores between the two academic years. Descriptive statistics were provided in tabular and graphical formats.

Statistical Significance and Effect Sizes

The correlation between perceived stress and academic performance was not statistically significant ($r = 0.058659 <$ critical value 0.205, $p > 0.05$). As such, no meaningful effect size could be reported, and no assumptions of the correlation test were violated.

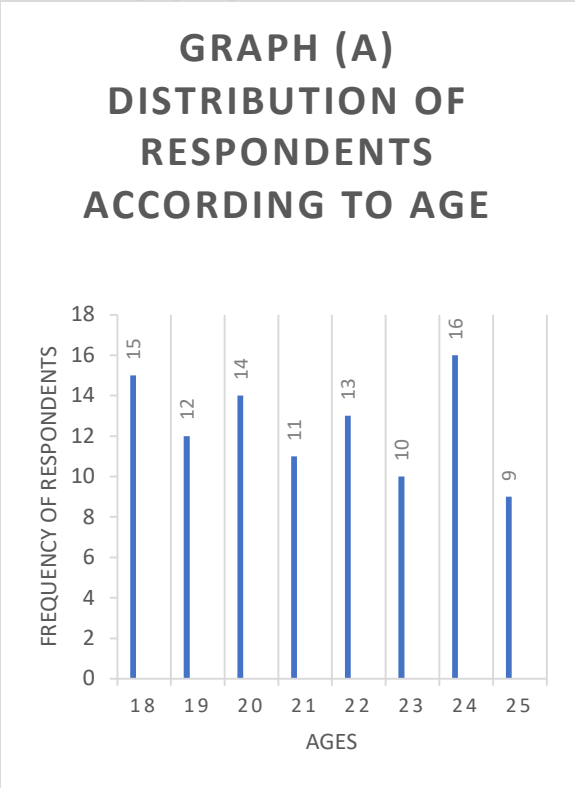
Visual Presentation of Results

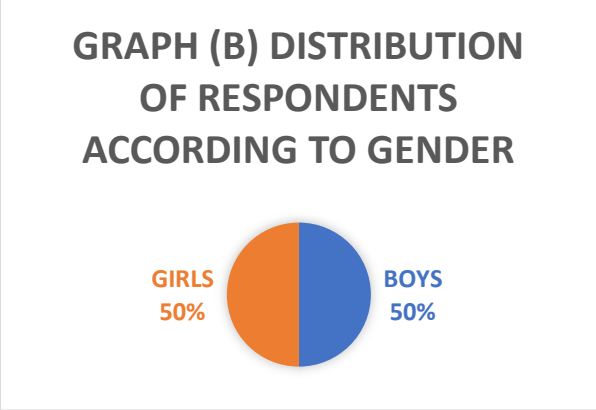
Results were visually represented through multiple graphs:

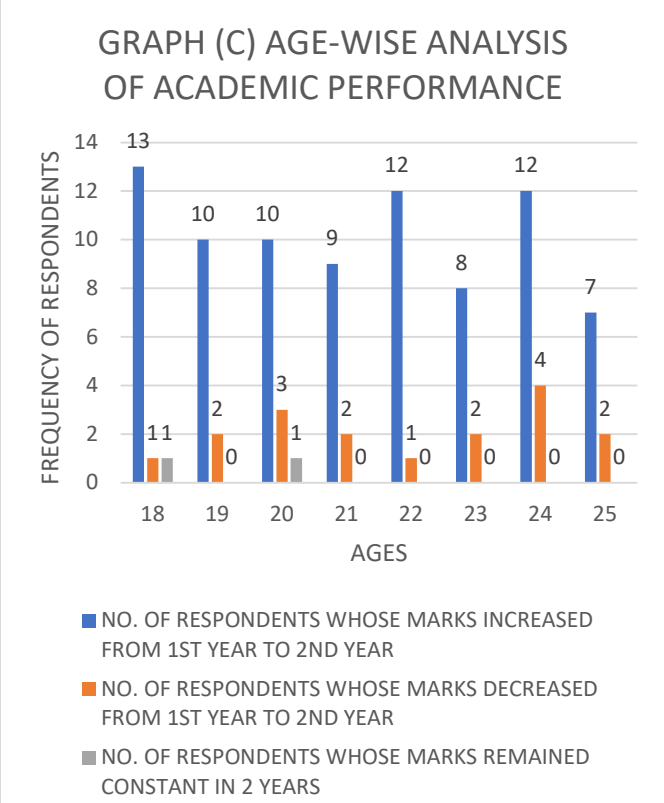
Graph (a) depicted the age distribution of respondents.

Graph (b) showed gender distribution (50% male, 50% female).

Graph (c) illustrated the number of students whose academic performance increased, decreased, or remained constant across different age groups.







Interpretation of Findings (brief overview)

The findings contradicted the initial hypothesis suggesting a significant relationship between perceived stress and academic performance. The results point to a possible complexity in the relationship, indicating that perceived stress levels may not directly affect educational outcomes.

Discussion

Interpretation of Findings

The findings of the current study revealed no significant relationship between perceived stress and academic performance, supporting the null hypothesis. This contrasts with existing literature that often links high

stress levels with reduced academic achievement.

Comparison with Existing Literature

Previous studies (e.g., Verma & Gupta, 1990; Anderson et al., 2005) suggested a negative effect of stress on academic outcomes. The current findings deviate from these, possibly due to sample specificity, effective coping mechanisms, or institutional support available to students at Galgotias University.

Theoretical Implications

These results suggest that perceived stress may not function as a universal predictor of academic performance. The findings challenge prevailing theoretical assumptions and call for a more nuanced approach to understanding how stress interacts with educational contexts.

Practical Implications

From a practical perspective, the study implies that reducing perceived stress alone may not directly enhance academic performance. Instead, institutions may need to adopt holistic strategies that address multiple factors affecting student success.

Limitations

The study was limited by a small sample size (n = 100) from a single institution, restricting generalizability. It only included students aged 18–25 and relied on self-reported stress levels, which may introduce bias. Moreover, academic performance for 2021–2022 may have been affected by the COVID-19 lockdown and associated online exams.

Future Research Directions

Future studies should include larger and more diverse samples, adopt longitudinal designs, and consider external variables such as social support, coping mechanisms, and environmental factors. Including qualitative methods could also help explore the subjective experience of academic stress more thoroughly.

Conclusion

The primary purpose of this study was to examine the relationship between students' perceived stress and their educational performance among undergraduate students enrolled in the School of Liberal at Galgotias University. To address this research problem, data was gathered using the Perceived Stress Questionnaire, a reliable instrument developed by Levenstein and colleagues, boasting internal consistency ranging from 0.90 to 0.92 and a test-retest reliability of 0.82.

The collected data were meticulously presented in both tabular and graphical formats to facilitate comprehensive analysis. Various statistical methods, including

frequency analysis, percentage calculations, and Pearson's product-moment relation, were employed to delve into the data and derive meaningful information.

In determining the perceived stress degrees of respondents, a straightforward scoring method was adopted. Responses were assigned points following the Likert scale directed in the questionnaire, and the total of scores were computed accordingly. This approach provided a quantitative study of perceived stress, enabling a thorough examination of its potential relationship with educational performance.

Upon conducting a rigorous analysis, the study findings revealed a noteworthy outcome. Contrary to the initial hypothesis (H1) proposing a positive relation among perceived stress and academic performance, the results supported the null hypothesis (H0[a]), suggesting no significant relation among the two variables. These findings challenge prior research and prevailing assumptions regarding the effect of perceived stress upon educational achievement. It is essential to acknowledge the potential for biases in respondent responses, which could have influenced the study outcomes. However, if deemed accurate, these findings signify a departure from established literature, prompting a reevaluation of the relation among perceived stress and educational performance.

In conclusion, this study highlights an important aspect of student well-being and educational success. By elucidating the complex interplay between perceived stress and educational performance, it contributes to the ongoing discourse on student mental health and educational outcomes. Further research endeavors are warranted to validate these findings and explore additional factors influencing students' experiences and achievements.

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Author contributions

Conceptualization, Dr. Alka Pandey; methodology, Prashant Singh; software, Prashant Singh; validation, Prashant Singh; formal analysis, Prashant Singh; investigation, Prashant Singh; resources, Prashant Singh; data curation, Prashant Singh; writing—original draft preparation, Dr. Alka Pandey; writing—review and editing, Dr. Alka Pandey, Prashant Singh; visualization, Prashant Singh; supervision, Dr. Alka Pandey; project administration, Dr. Alka Pandey. All authors have read and

agreed to the published version of the manuscript.

Competing interests

The authors declare no competing interests.

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