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Statistical approach to understanding students' opinions on how stress impacts their day to day life

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ABSTRACT

This paper helps to understand the student's insightful ideas of how stress affects their day-to-day lives because many students use the word stress frequently in their daily lives. The majority of academics and researchers have started looking into the causes of stress in adults, college students, and school-aged children. This case study, the author wants to find out what students think about different aspects of stress in their daily lives. At Bishop Heber College in Trichy, India, data was obtained from under-graduate and Post-graduate mathematics students. The data was gathered from the students using Google forms. The gathered data was statistically analyzed. Descriptive statistics are mostly used to describe the information on various variables that was obtained from the questionnaire (frequency, percentages, pie, and line charts). To ascertain whether there was a significant difference in the students' perceptions of how stress affects their daily lives, Pearson's Correlation and Chi-Square tests were also performed. Based on the data, suggestions and conclusions were drawn.

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I. INTRODUCTION

Stress truly exists among the students. The time when stress was quickly written off as an inevitable part of growing up or a necessary evil in our day to day life. The intense competition of college admissions, the rigorous academic requirements, the exorbitant tuition costs, and the general sense of being away from home and friends for extended periods of time are all intended to weed out the most resilient students in the class. An important first step in addressing stress is realizing that it occurs and is rarely avoidable. It is the beginning of the process of achieving the aim of scientific psychological therapies. Many institutions offer their students seminars or stress-relieving sessions as part of their academic coursework. The majority of students are ignorant of how stress affects their ability to make wise judgments in life. From the aforementioned observations, the researcher decided to analyse the students' perceptions of the various stress variables and conducted a statistical analysis using the information gathered. Conclusions and recommendations are provided based on the results of the experimental analysis report.

II. RESEARCH REVIEW

Students in educational institutions have been using the word "stress" far more frequently in recent years. A recent study found that students' knowledge of stress and methods for managing it is not particularly good. Social media's assistance in facilitating learning experiences is anticipated to improve how people use the word "stress". The case study was motivated by this to investigate how students' perceptions of stress affect their daily lives. This paper discusses how this study was analyzed utilizing several performance approaches as well as some of the review studies on how to manage students' stress and how it affects their daily lives.

At a private medical school in the Midwest, the authors Mitchell, R. E., Matthews, J. R., Grandy, & Lupo (1983) posed the question of stress and looked at its prevalence in two subsequent classes of first-year medical students. The data was analysed, and the analysis was used to interpret the results. Largo-Wight, E., Peterson, P. M., & Chen, W. W. (2005) reviewed the implications of college health promotion for stress management and looked at the connections between perceived problem solving, stress, and physical health. Undergraduate college students' perceptions of stress, problem-solving skills, and health were measured using a questionnaire, the Personal Problem-solving Inventory (PSI), and a checklist of symptoms related to physical health problems brought on by stress.

At a large public university, Joo, S. H., Durband, D. B., and Grable (2008) looked at the characteristics of students who reported dropping out or reducing their credit hours due to financial stress. These students were compared in an analysis to those who did not drop out or reduce on their homework. Results demonstrate the link between financial stress and academic achievement. The branding perspective of Alexandria destination marketing enterprises was investigated by Hassan, S. B., Hamid, M. S. A., and Bohairy, H. A. (2010). Using a completed questionnaire procedure, a Likert scale, and statistical models to assess and interpret the research findings, 100 respondents from the official and public sectors were surveyed to gather data.

The stress level of undergraduate students at the University of Cape Coast in Ghana is a topic Amponsah, M., and Owolabi, H. O. (2011) are interested in exploring. The case study approach was used to gather data on the perceived stress levels of recently enrolled educational psychology students and the degree to which these could be related to background factors like age, gender, and work experience or time spent waiting for university admission after high school graduation. There were discussions about the findings' implications for future study, lecturers, school administrators, counsellors, and health professionals, as well as recommendations.

Bukhsh, Q., Shahzad, A., & Nisa, M. (2011) planned this study to examine learning stress and stress management techniques for university students. The study's goals were to identify the typical signs of stress, its causes, and the stress-reduction techniques employed by students to deal with it. The survey approach was used to gather the data. In order to finish this study, the descriptive method of research was used. The majority of students, according to this survey, experienced weariness under stress. The biggest sources of stress were the workload and tasks, and they all stated that they could unwind by watching TV or movies, listening to music, or engaging in other leisure activities. It was suggested that participating in extracurricular activities in the academic field could lessen the workload of studying. The impact of factors like perceived stress on students' academic performance was examined by the authors of this study, Talib, N., & Zia-ur-Rehman, M. (2012). The correlation coefficient was performed to determine the connections between perceived stress and academic achievement. The main sources of stress which influences students' academic performance were their course load, sleep issues, and Social activities. A book on statistical techniques for psychology was written by D. C. Howell in 2012 and it elaborates about the surveys statistical methods used frequently in the behavioural and social sciences, education, and psychology.

The authors of the study Khan, M. J., Altaf, & Kausar (2013) examined the relationship between perceived academic stress and students' performance as well as the effects of demographic factors including gender, age, and educational attainment. The findings indicates that academic stress has a considerable impact on students' performance. The Perceived Stress Scale ratings of male and female university students did not differ significantly (PSS). On the PSS, there was a considerable disparity between junior and senior students. Younger kids were reported to have more academic stress than older students. When students' stress levels were assessed at the start and end of the semester, there was a non-significant difference in their PSS ratings.

The varied impacts of stress on male and female students were reviewed by Pourrajab, Rabbani, and Kasmaiezhadfad in 2014. Stress can be viewed as any internal or external force that makes environment adaptation challenging. Mishra, M. (2018), evaluated male and female B. Ed. students as part of a comparison research on their levels of academic stress. The goal of this study was to determine how stressed out male and female B.Ed students were about their coursework. Students' levels of stress were assessed using an academic stress scale. The results showed that B.Ed. students are more likely to feel academic stress. The gender gap was also discovered to be significant, with female students reporting lower levels of academic stress than male students. The conclusion and its consequences have been examined. The authors Najafi, N., Movahed, K., Barzegar, Z., & Samani, S. (2018) used survey study to identify environmental factors influencing students' stress in the educational setting in Shiraz, Iran. A one-sample T-test for each of the

environmental conditions was used to examine their impact on student stress. Additionally, the Friedman test was employed to examine the significance of environmental factors interacting with one another.

In-depth research on the level of academic and environmental stress among college students was conducted by Yikealo, Yemane, and Karvinen (2018). Statistical techniques for both inference and description were used to analyze the data. According to the study's findings, most College of Education students report feeling a moderate amount of academic and environmental stress. The students' cumulative GPA and gender were also shown to be statistically undifferentiated. However, it was only discovered that there was a very tiny statistically meaningful correlation between CGPA and the degree of environmental stress. The majority of students spoke about how they regularly use effective stress-reduction techniques. The study is anticipated to make a significant contribution to measuring stress levels and identifying the most stressful environmental and academic elements.

According to the authors Akhtar, F., Heyat, M. B. B., Li, J. P., Patel, P. K., and Guragai, B. (2020), stress is a major cause of disease in the modern world, as well as a major contributor to suicide. Researchers used cutting-edge methods, such as machine learning, to identify stress and developed a thorough picture of how machine learning contributes to stress management. Using longitudinal data gathered since 2018, Elmer, Mepham, and Stadtfeld (2020) examined students' social networks and mental health before and after the COVID-19 pandemic in April 2020. Researchers examined changes in two cohorts of Swiss undergraduate students who experienced the crisis and made additional comparisons to a prior cohort that did not experience the crisis. They looked at changes in multiple social network dimensions (interaction, friendship, social support, co-studying), as well as mental health indicators (depression, anxiety, stress, and loneliness).

Scholars have expressed concern about the COVID-19 pandemic's potentially crippling effects on young people's mental health amid the recent discussions about the psychological impact of the disease. Therefore, a comprehensive evaluation of the studies on the effects of the COVID-19 pandemic on young people's mental health was sought after by the researchers Nearchou, F., Flinn, C., Niland, R., Subramaniam, S. S., and Hennessy (2020). All of these studies were found to have low or intermediate methodological quality, according to the quality assessment. Young people are being affected by the COVID-19 epidemic, hence it is crucial to produce solid scientific data to guide policy decisions. Therefore, future research should dramatically increase its methodological quality.

The case study, which was presented by the authors Chandrasiri, K. G. P. R., Chandrasena, A. A., De Silva, L. H. C. R., Jayasinghe, H. W. V. O., Dassanayake, G. T., and Seneweera, O. (2021), examined the efficient and effective management of stress of university undergraduates in Sri Lanka who experienced stress for various reasons. Soliman, M., Ivanov, & Webster (2021) examined about tourism studies by looking at the psychological elements that influence tourism researchers' productivity during COVID-19 and comparing their responses to non-tourism scholars. On the basis of a global sample of 1073 scholars from 83 countries, they also looked at how the changing working conditions as a result of various constraints have affected the productivity of scholars.

The purpose of this study is to learn more about how students manage stress in their daily lives and the impacts of stress. Numerous studies on learning stress and stress management have been written up in the literature. The authors of this study, however, concentrated on comprehending students' perspectives on how stress affects their daily lives.

III. RESEARCH METHODOLOGY

A. Notation:

QG	Gender
Q1	At which age do you aware of the word 'Stress'?
Q2	Have you been under stress recently?
Q3	Do you feel very sensitive and irritable while in stress?
Q4	How Stressed do you feel on a daily basis during the academic year? [1 to 3 – Low Stress Level; 4 to 7 – Moderate Stress Level; 8 to 10 – High Stress Level]
Q5	Do you think that stress will lead to medical problems?
Q6	How do your relief your stress?
Q7	Can you identify a person being in stress?
Q8	What are the usual causes of stress in your life?
Q9	Analysis on how stress plays a daily role in your life

- Q9a Stress is common nowadays
- Q9b Society is also a reason for stress
- Q9c Now-a-days children are into stress without any reason
- Q9d Having trouble falling asleep
- Q9e Withdrawing or isolating from people
- Q9f Difficulty in giving or accepting support or health
- Q9g Impatient or disrespectful to others

B. Research goals:

This survey's objective is to gather important data on college students' perceptions of how stress affects their daily lives and their mental health and wellbeing. In this investigation, the pursuing goals were looked into:

- ✓ age at which students are aware of the term "stress",
- ✓ students who are under stress consequently have extreme sensitivity and irritability,
- ✓ everyday stress levels of students during the academic year,
- ✓ understanding of medical conditions that may arise in stressed-out students,
- ✓ students' management methods when they are in stress,
- ✓ whether the student can identify a person who is stressed,
- ✓ the usual causes of stress on their life and
- ✓ analysis of the impact of stress on a day to day basis in your life

The research strategy focuses on conducting a survey using Google Forms among the mathematics students of Bishop Heber College in Trichy, INDIA, in order to meet the study's objectives.

C. Measures:

Based on the conceptual framework, the current article includes one latent reflective variable, which is an analysis of how stress affects your life on a regular basis. The aforementioned constraint was assessed using a range of items, some of which are new scales, that were pulled from a survey of the literature.

D. The Data Collection Process:

The study attempted to gather information from 600 students in the mathematics department, comprising Undergraduate and Postgraduate students from Aided, Self-financing, and Morning and Evening shifts. Participants are asked to complete an online survey regarding how stress affects their daily lives and how it affects their mental health and wellbeing.

The researcher employed the following sample tactics: (a) The survey link is sent directly to potential respondents via their emails and social media accounts, such as Facebook, WhatsApp, Instagram, Snapchat, and other platforms, to facilitate convenience sampling. (b) self-selection sampling through institutional mail lists and group conversations. (c) requesting that the teachers and class representative sent to their individual classes to conduct a snowball sampling. These sample approaches made it possible to collect a large number of responses from the diverse set of students who is a part of aided and self-financing sections throughout both the morning and evening shifts. Between October 10, 2022, and October 25, 2022, all responses from the students are gathered by adopting the above sampling techniques. Of the targeted students, 69.7% responded, and all of the responses are reliable for the next investigation.

E. Several components of the questioner:

This online survey has three parts, which are as follows:

- ✓ In the first part of the survey, respondents were asked for information about themselves, including their name, roll number, class, section, institutional email ID, mobile number, and gender.
- ✓ In the second part of the survey, included all information and viewpoints on stress management.
- ✓ On a 3-point Likert-type scale, from Strongly agree to agree to disagree, were all of the statements with latent variable scores that were included in the final part of the survey. It took 5 to 10 minutes to answer the questionnaire.

F. Data analysis procedure:

The data processing procedure uses MS-Excel office and R Programming statistical tools.

- ✓ the frequency and percentage of each question,
- ✓ Descriptive statistics specific to each question,
- ✓ Pearson's Correlation and Chi Square Test.

IV. EMPIRICAL FINDINGS

A. Descriptive Statistics:

Table 4.1 Characteristics of the Sample

Demographics	Categories	Frequency	Percentage
<i>Gender</i>	Male	128	31%
	Female	290	69%
<i>At which age do you aware of the word 'Stress'?</i>	11 to 15	73	17%
	16 to 21	312	75%
	22 to 28	33	8%
<i>Have you been under stress recently?</i>	Yes	257	61%
	No	161	39%
<i>Do you feel very sensitive and irritable while in stress?</i>	Yes	313	75%
	No	105	25%
<i>How Stressed do you feel on a daily basis during the academic year?</i>	1 to 3	113	27%
	4 to 7	204	49%
	8 to 10	101	24%
<i>Do you think that stress will lead to medical problems?</i>	Yes	325	78%
	No	93	22%
<i>Can you identify a person being in stress?</i>	Yes	359	86%
	No	59	14%
Analysis on how stress plays a daily role in your life			
<i>Stress is common nowadays</i>	Strongly Agree	134	32%
	Agree	248	59%
	Disagree	36	9%
<i>Society is also a reason for stress</i>	Strongly Agree	136	33%
	Agree	238	57%
	Disagree	44	11%
<i>Now-a-days children are into stress without any reason</i>	Strongly Agree	111	27%
	Agree	236	56%
	Disagree	71	17%
<i>Having trouble falling asleep</i>	Strongly Agree	88	21%
	Agree	246	59%
	Disagree	84	20%
<i>Withdrawing or isolating from people</i>	Strongly Agree	88	21%
	Agree	253	61%
	Disagree	77	18%
<i>Difficulty in giving or accepting support or health</i>	Strongly Agree	48	11%
	Agree	285	68%
	Disagree	85	20%
<i>Impatient or disrespectful to others</i>	Strongly Agree	68	16%
	Agree	223	53%
	Disagree	127	30%

Discussion:

290 out of the 418 participants, or 69%, were female. For the question “At which age do you aware of the word Stress?”, 75% of respondents are belong to the age group of 16 to 21. 61 percent of the respondents admitted to recently experiencing stress in their daily lives. In response to a question about how they feel under stress, 75% of students said they feel extremely sensitive and irritable. According to 49% of students, their level of stress during the academic year is moderate. 78 percent of the students are aware that stress might affect their health and wellbeing. 86% of the respondent said that they can identify the stressed person.

Table 4.2 Percentage of student's stress plays a daily role in their life

Analysis on how stress plays a daily role in their life	Strongly Agree	Agree	Disagree
<i>Stress is common nowadays</i>	32%	59%	9%
<i>Society is also a reason for stress</i>	33%	57%	11%
<i>Now-a-days children are into stress without any reason</i>	27%	56%	17%
<i>Having trouble falling asleep</i>	21%	59%	20%
<i>Withdrawing or isolating from people</i>	21%	61%	18%

Difficulty in giving or accepting support or health	11%	68%	20%
Impatient or disrespectful to others	16%	53%	30%
Average	23%	59%	18%

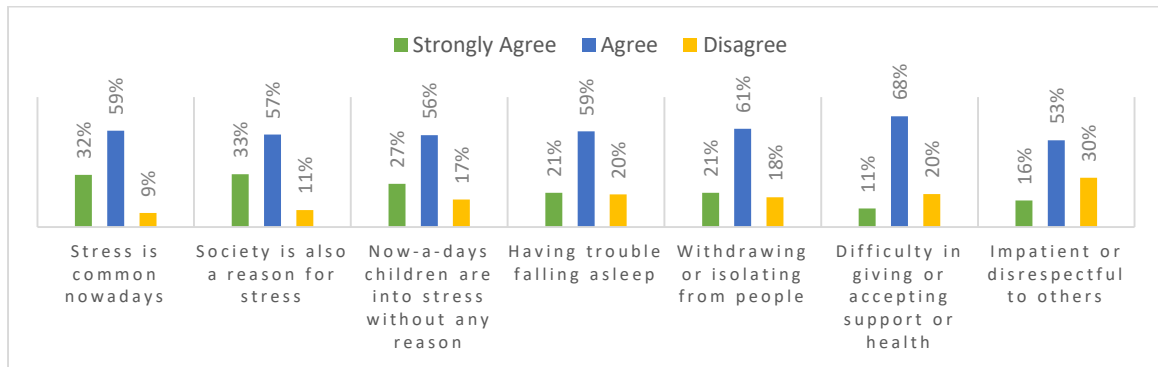


Fig. 4.1 Percentage of student’s stress plays a daily role in their life

Discussion:

The following are some facts about stress in students' daily lives: Stress is common these days; society is considered as a cause of stress; Now-a-days students are into stress without any reason because of this they have trouble sleeping; withdraw or isolate from others; find it difficult to offer or accept help from others; disrespectful or impatient with others and so on. Numerous characteristics and the percentage on a 3-point Likert-type scale, from Strongly agree to agree to disagree, are shown in Table 4.2 and Fig. 4.1.

The students' stress-reduction techniques include listening to music, taking medication, speaking with friends and family, meditating, reading, using social media, watching TV, playing with children, sleeping, and exercising or participating in sports.

The general causes of stress in their life include studies, finances, health-related difficulties, planning for the future, and the environment.

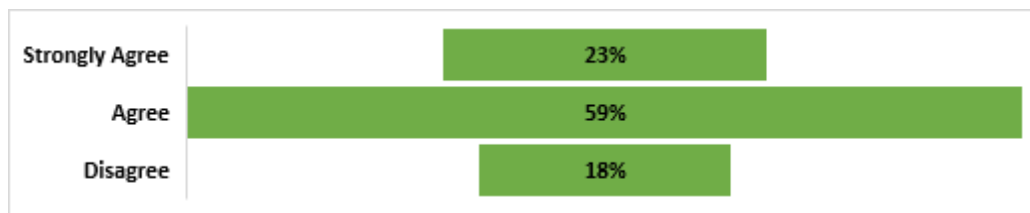


Fig. 4.2 Average Percentage of student’s stress

According to the results shown in Fig. 4.2, 59 percent of respondents agreed, 23 percent strongly agreed, and 18 percent disagreed that how students' stress affects their daily lives.

B. Correlation

Pearson’s correlation coefficient:

Pearson correlation (r) is a statistical method for determining the degree and direction of a linear relationship between two variables. This can be accomplished mathematically by dividing the covariance of the two variables $cov(x, y)$ by the product of their standard deviations S_x, S_y . Pearson’s correlation (r) =

$$r_{xy} = \frac{cov(x,y)}{S_x \times S_y}$$

Pearson’s correlation:

The value of **r** ranges between -1 and 1 . A correlation of -1 shows a perfect negative correlation, while a correlation of 1 shows a perfect positive correlation. A correlation of 0 shows no relationship between the movement of the two variables.

The table below demonstrates how to interpret the size (strength) of a correlation coefficient.

Table 4.3 Pearson's correlation coefficient

	Q1	Q2	Q3	Q4	Q5	Q7	
Q1	1.00						
Q2	0.12	1.00					
Q3	0.06	0.36	1.00				
Q4	-0.04	-0.43	-0.30	1.00			
Q5	0.12	0.08	0.17	-0.09	1.00		
Q7	0.05	0.17	0.15	-0.11	0.10	1.00	

	Q9A	Q9B	Q9C	Q9D	Q9E	Q9F	Q9G
Q9A	1.00						
Q9B	0.36	1.00					
Q9C	0.25	0.29	1.00				
Q9D	0.19	0.13	0.19	1.00			
Q9E	0.30	0.27	0.19	0.41	1.00		
Q9F	0.31	0.22	0.21	0.36	0.40	1.00	
Q9G	0.27	0.24	0.25	0.42	0.41	0.50	1.00

-1.00 to -0.30	Negative Correlation	-0.30 to 0.30	Neutral Correlation	0.30 to 1.00	Positive Correlation
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Discussion:

The Pearson's correlation coefficient is shown in Table 4.3 for each question from Q1 to Q9g. When the correlation values fall between 0.30 and 1.00, we can say that the corresponding questions have a positive correlation, when the values fall between -0.30 and 0.30, we can say that the correlation is neutral, and when the values fall between -1.00 and -0.30, we can say that the correlation is negative. The majority of students believe that stress played a daily part in their lives.

C. Chi-Square Test:

Hypothesis H0: The level of satisfaction among students with how stress affects their mental health and wellbeing on a daily basis does not dramatically differ from student to student.

Table 4.4 Chi-Square Test Frequency

	Actual Frequency				Expected Frequency			
	Strongly Agree	Agree	Disagree	Grand Total	Strongly Agree	Agree	Disagree	Grand Total
Q11a	134	248	36	418	96.14	247	74.9	418
Q11b	136	238	44	418	96.14	247	74.9	418
Q11c	111	236	71	418	96.14	247	74.9	418
Q11d	88	246	84	418	96.14	247	74.9	418
Q11e	88	253	77	418	96.14	247	74.9	418
Q11f	48	285	85	418	96.14	247	74.9	418
Q11g	68	223	127	418	96.14	247	74.9	418
Total	673	1729	524	2926	673	1729	524	2926

Chi-Square p-value: 1.10977E-25 < 0.05

Discussion:

The p-value is less than 0.05, which means that hypothesis H0 is rejected. Students' levels of satisfaction with how stress impacts their mental health and wellness on a daily basis greatly vary from one student to another.

V. CONCLUSION

The investigation reveals that the majority of adult students acknowledge their stress levels, and the authors derived the following conclusions from this information. During the academic year, stress levels are moderate and students are aware that stress may have an adverse effect on their health and wellbeing. It is

said that the majority of students report feeling particularly sensitive and irritable when under stress. The degree to which different students are satisfied with how stress affects their daily mental health and wellness varies substantially.

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