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Research Article

Stress Induced by Technology Abuse in the students

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ABSTRACT

Aim: Generally, this research strategy assesses how excessive use of technology impacts on the stress of students from a psychological perspective, learning performance, and functioning. The study is based on the review of the literature where main attention is paid to negative impacts of technostress on the academic performance and psychological well-being of students as well as gender-related stressors and the relationship between problematic internet use and these outcomes.

Methods: The current literature was therefore reviewed and integrated from different sources and presented in a competitive manner. Other works involved gender–specific stressors among information technology students that were conducted by Mazo (2015), the role of problematic use of the internet on technostress done by Abdullah et al., (2023) the impact of social media usage, fear of missing out, and generalized smartphone addiction by Kirschner and Karpinski (2022) & Bakioğlu et al. (2022) works. Also, a cross-sectional study was carried out on the university students of the Bachelor of Nursing using the standardized self-administered questionnaire developed based on the technology abuse scale, perceived stress scale, health-promoting lifestyle profile-II, and student version of the toxic triad.

Results: This is to mean that, psychological bullying through use of technology results in high stress levels and in this way, impacts on learning achievement, psychological health, and sleep among students. This study finds that both genders have different stressors which emphasizes that problematic internet use or technostress reduces psychological well-being whereby social use of media and FoMO increase smartphone addiction.

Conclusion: As such, it comprehensively shows the impact of technology used negatively on students' stress and their well-being. Thus, providing how technostress and its effects on academic achievement and psychological health may be ameliorated needs for intervention strategies to prevent further increase in technology's negative effects on the health and efficiency of students.

Keywords: Stress, Technology abuse, stress in students, impact of technology abuse, adverse effects of technology

INTRODUCTION:

In this high-speed technology era, the popularity status of technology in the student's life has reached never-before levels. Integration of smartphones, computers, and various other digital platforms has transformed the very face of an education system to offer unknown information and communication. But against the convenience and connectivity offered by technology, a shadow casts its feel over the entire student community; frustration over the misuse of technology.

It is as if technology seamlessly blends into the student's world, creating this two-sided universe. We can allow students to have tools to learn, play, and interact but, at the same time, overindulgence or misuse, in this article, creates problems. Misuse, according to the article, encompasses a vast range of behaviors that cause anxiety and hamper the mental health, academic performance, and general well-being of students.

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This study sets out to have a deeper understanding of the relationship of technology utilization and the stress sensed by the students. The saying misuse of technology means overuse or accidental event, continuous connection, and failure to be without digital tools despite the fact that it affects them in every aspect.

This study attempts to investigate the diverse repercussions of technology lapse in individuals. Study conducted on the stress levels of students found out that the tools which require the use of technology to improve their academic performance can actually raise their tension and thus reduce their sense of well-being. By examining the subtlety in this phenomenon, it is possible to finally recognize potential impacts, problem-solving strategies, and educational plans that would limit the negative effect of technology use on student life.

Through the readings, experiments, and qualitative data analysis, the column was purposely established to investigate how using technology may lead to stress among adolescents. A comprehensive view of this trend can be obtained by not only investigating its origins and reasons for its perpetuation but also predicting its outcomes. From a deeper knowledge of these issues and the possible routes of intervention that can focus on the healthy behaviors of the students would also be possible.

The impact of technology abuse/overuse in students can spread into various aspects of well being:

MENTAL HEALTH AND WELL-BEING:

Increased Stress and Anxiety: The article suggests that technology overuse is more related to students' being stressed, mainly because they wish to be clear in touch, be active, or at least have access to social networks.

Sleep Disturbance: Besides a plethora of health issues, increased screen time, especially at bedtime may significantly shorten sleep cycles, with poorer quality sleep and may be linked with many psychiatric disorders.

Social Comparison and Isolation: Too much social media use can lead to feelings of dissonance, social comparison, and FOMO, depression exacerbation, and decreased self-esteem.

Reduced Emotional Regulation: Overexposure; in particular, negative or unpleasant content on the internet may often a person's mental control if the content is too extreme, thus a person may face anxiety disorder or even desensitization.

Academic Performance: Decreased Focus and Attention: The extensive use of electronic gadgets usually results in shorter spans for attention and consequently, may make it difficult to stay focused and keep concentrating.

Decline in Academic Achievement: Students may experience poorer academic performance due to distractions, procrastination, or insufficient study time caused by excessive use of technology.

Impaired Cognitive Abilities: Frequent use of digital tools can result in diminished critical thinking skills, difficulties in problem-solving, and reduced memory capacity.

Physical Health:

Physical Strain and Health Issues: Too much usage of devices can be the main factor of physical difficulties like eye strain, headaches, musculoskeletal issues, sitting lifestyle, and postural issues.

Behavioral Changes:

Addictive Behaviors: Technology addiction may be responsible for such a situation where students can't take a break from their devices, and instead real-world contacts and tasks are set aside to give priority to online involvement.

Reduced Social Interaction: An over dependence on technology robs people of face to face communication hence making it difficult for people to be able to bond.

Objectives:

1. To identify the relationship between amount of time spent using technology and stress levels among students

2. To find the impact of technology on academic performance of students

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Hypothesis:

Null hypothesis (H0): The hours spent on technology have no significant correlation with stress levels in students.

Alternative hypothesis (H1): The longer a student uses technology, the better the positive correlation between the use of technology and increased levels of stress.

LITERATURE REVIEW:

Upadhyaya, P., & Vrinda (2020) study discovered the results of a research that demonstrated how technostress can badly affect the academic productivity of university students. The main finding of the research is that students had moderate levels of technostress, and that there was a negative impact of technostress on their productivity academically.
The researchers Vallone, F., Galvin, et.al. (2023) explored the effects, directly and indirectly, of technostress along with academic motivation, on the students' psychological health. According to their data, technostress factors like techno-overload and work-home conflict had detrimental psychological outcomes of anxiety and depression, respectively. Furthermore, the study findings showed that the academic motivation factors including intrinsic motivation and identified regulation signified the connection between technostress impact and the psychological health status changes. The authors propose that the measures adopted should be directed to dealing with the unfavorable consequences of technostress for academic motivation and mental health, but technostress should also be highlighted as a mediator.

N. Mazo & G. (2015) in their research revealed that the most usual precipitate of stress among students of Bachelor Science in Information Technology in the Philippines is school-related, with thesis writing/research for boys and school requirements/projects for girls being the major stresses, among others, that female students are frequently dealing with. The most common effect of stress amongst the boys was insomnia, whereas girls not only experienced sleepless nights, but were irritable and moody as well. Men used the computer to handle tension, while the women only used the computer for prayer. Other research carried out in the same university highlighted differences in the issues, effects, and dealing mechanisms of stress among the male and female respondents.

The research undertaken by Abdullah, H. B., Bajwa, R. S., et al. (2023) led to the conclusion that there is a connection between spending a lot of time online and the feeling of technostress in Pakistani college students, with problematic internet use (PIU) being a partial mediator of this relationship, that is, PIU is a causative factor of technostress.

In a study conducted by Kirschner, P. A., and Karpinski, A. C. (2010), it was found that students who used Facebook typically had a lower mean GPA and spent fewer hours studying per week unlike un-users. But the total internet use did not vary a lot between the groups. Moreover, differences in GPA were observed between undergraduate and graduate students, where postgraduate students positively expressed a higher mean GPA than undergraduates.

Bakioğlu, F., Deniz, M., et al., (2022), conducted a research study that Named On-FoMO Inventory: The scale proposed to measure the online FoMO. This scale exhibited good internal consistency and construct validity with four subscales. The study also revealed useful information about FOMO, social media addiction and smartphone addiction since all three variables tested positively were closely related. Further, it revealed that both the use of social media and smartphone usage served as moderators between FOMO and life satisfaction. This led to the conclusion that as online fear of missing out increases, so does the level of addiction to social media and smartphones, while life satisfaction tends to decrease.

The researchers from Lane, H.-Y., Chang, C.-J., et al. (2021) discovered that the continuous use of a phone has harmful effects on sleep, particularly it impairs sleep latency and daytime dysfunction. In addition, keenness to new experiences and the desire to avoid potential risks are the most characteristic traits of a highly addicted person to a smartphone.

The report was assembled by Pinto, M. S., & Poornananda, D. S. (2017), discovered that the relation between the frequency of the internet and the students' time spent on the internet is positive. Male and urban students used the internet more than the female and rural students. The investigators outlined three major benefits for the use of the internet based on factors of specific gratifications: entertainment and pass time, education, and social interaction.

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The by Yea-re should always test the amount of Internet usage amongst students since it is the basic determinant for which they use and have best enjoyment and satisfaction. Among children of different socio-economic status, internet is used for different purposes and has different benefits. Students are very creative and they change their main reasons for logging on the internet all the time as they change online technology and culture in the specific settings they belong to.

In a study by Garzon, J. D., Kim, N., et al. (2019), most senior high students in the Philippines are found to be addicted to their Facebook accounts, however, their Facebook use does not impact their school performance at a significant level.

Much technology use has a considerable effect on the sleeping disorders of college students, this being the major finding of a study made by Rosen, L., Carrier, L. M., et al. (2016). Mainly, the study found that cognitive and affective factors, which are both part of the technology usage process, that is, anxiety/dependence and executive dysfunction, were negatively correlated with the basic needs for sufficient night rest of students. At the same time, the data showed that day/night cellphone usage and phone location at bedtime were identified as loads contributing to sleep problems.

According to the study by Masood, A., et al. (2020), students perusing the SNSs very often leads to cognitive distraction thereby affecting their academic performance. This paper differentiates various technological attributes where socialization, social comparisons, fun, and information seeking are aspects that contribute to high levels of SNS usage. It highlights the requirement for the cognitive behavioral control in a bid to lessen dangerous outcome resulting from over reliance on such websites. It, therefore, becomes important to comprehend all these from a stress standpoint as a way of addressing the issues around the problems associated with the overuse of SNSs, and in helping the student overcome the odds and perform well academically.

RESEARCH METHODOLOGY:

1. Research Design:

In this current study, both quantitative and qualitative data gathering and analysis methods are employed with a view of fully capturing the relationship between technology misuse and student stress. These features afford a comprehensive investigation of the topic which is consonant with the complexity posed by the research question.

2. Sample Size & Sampling Universe:

In the study sample, 57 males and 57 females are selected from the age group of 16-30 years, and all respondents are regular students of the institutions in Rajasthan; 183 respondents participated in this study. In order to reach the first objective, purposeful sampling method was used, where participants from a wide range of academic discipline, gender and ground institutions were incorporated to ensure that the sample was heterogeneous.

3. Survey Instrument:

To obtain quantitative information, a questionnaire, well-structured, was developed. Technology use and stress, academic performance and well-being were other questions that formed the survey.

4. Statistical Instruments:

Correlation coefficients are used in data analysis.

$$r = \frac{1}{n-1}\sum\left(\frac{x-\bar{x}}{s_x}\right)\left(\frac{y-\bar{y}}{s_y}\right)$$

Now consider this first case scenario:

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The variable x is the amount of hours spent,

The variable y is the level of stress and anxiety.

Now consider this second case scenario:

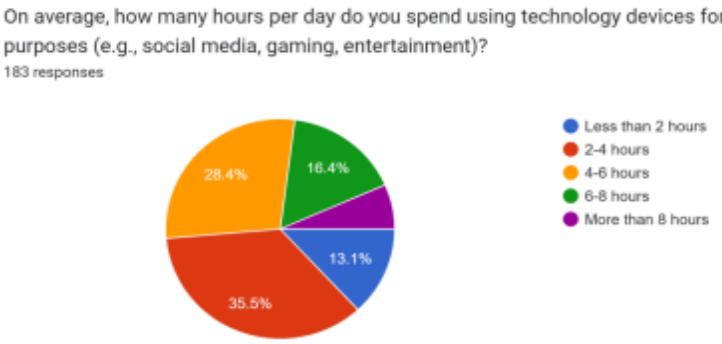
The variable x is the amount of hours spent,

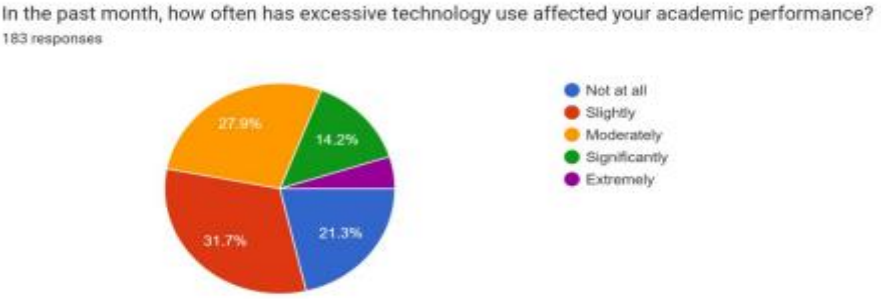
The variable y is the performance academically.

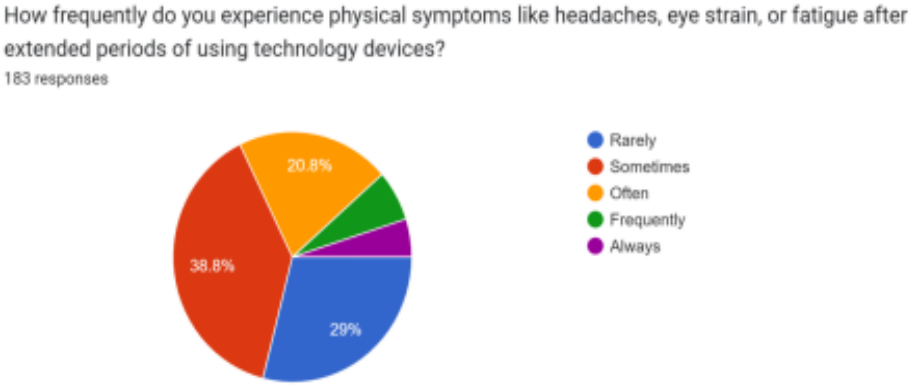
In example case three:

Here, the variable x is given in terms of hours, and the variable y is given in terms of physical symptoms.

Data Analysis & Interpretation:







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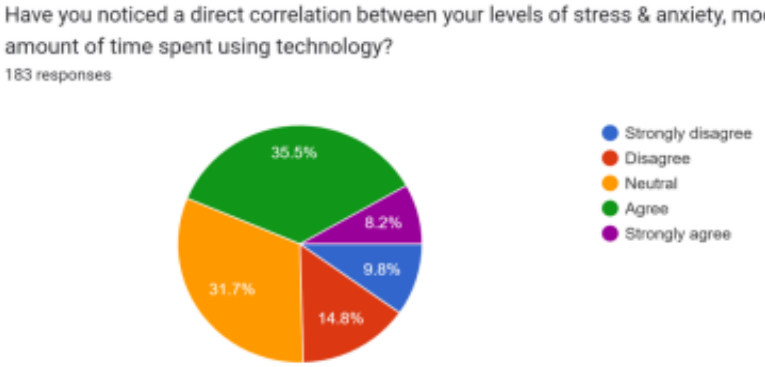

Pearson Correlation between time spent on devices and the levels of stress and anxiety:

Stress Experience =0.285

P-Value = 0.000

This is a positive correlation, and the p-value is such that it holds the fact that the correlation model has relevance in the population.

Correlation between Time Spent on Devices and Academic performance using Pearson's Correlation

Academic Performance = 0.204

P-Value = 0.006

Again, p-value indicates positive correlation as well as the p-value states that the correlation model is significant in the population.

Finally, for physical symptoms:

Physical Symptoms = 0.239

P-Value = 0.001

We find positive correlation as well as the p-value confirming that the correlation model is significant in the population.

Results:

Output also indicates a strong and positive correlation between the amount of time students spend interacting with technology and a rise in experienced stress levels; the value of p is less than 0.05. Therefore, we reject the Null Hypothesis and accept the Alternative Hypothesis.

CONCLUSIONS & FINDINGS:

This research has attempted to explore the complicated relation between technology misuse and the amount of student stress, looking for different dimensions of well-being. Based on this study, findings have proved that there is a bad influence of technostress, gender-based peculiar stressors, and problematic internet use as mediator. By using a mixed-methods approach based on 183 students in Rajasthan, research was able to point out that there are major positive correlations between technology usage and rising levels of stress, which carries implications for mental health and academic performance as well as physical well-being.

The statistical analysis, particularly through Pearson correlation coefficients, supported such a result and negated the null hypothesis, establishing the connection of technology use to stress. This study comes as something very crucial for educators, policymakers, and health professionals as it shows that there is a need for actions aimed at

curbing technology misuse to foster well-being in students. Results are therefore emphasized with the need for proactive approaches that promote responsible technology use and result in a balanced digital environment for students. Further studies in the area will have to be conducted to appropriately change approaches based on developing educational perspectives in the evolving high-tech environment.

Limitations of the study:

Sample Size and Diversity:

The study's use of a sample consisting of 183 participants from institutions in Rajasthan could restrict the generalizability of its findings. Future research should focus on obtaining larger and more diverse samples to improve the external validity of the results.

Cross-Sectional Design:

The cross-sectional design of the study offers a fixed view, which restricts the capacity to determine causal relationships over time. Longitudinal studies could provide a deeper insight into the interactions between technology use and student stress.

Self-Reporting Bias:
The research relies significantly on self-reported data, which can lead to bias and inaccuracies. Future studies might benefit from including objective measures or blending self-reporting with behavioral observations to improve the reliability of the data.

Scope of future Research:

Technological Trends:

Examine the effects of emerging technologies, focusing on developments in social media, virtual reality, and educational technology, to grasp their possible impact on student stress.

Intervention Strategies:

Observe and implement connected intervention strategies which may assist in lowering the technology-related stress level among students. Assess the degree to which school programs or policies impact responsible uses of technology.

Comparative Analysis

Carry out comparative analysis for high schools, undergraduates, and master's institutions in order to establish the extent at which technology utilization is related to stress factors among students, hence adjust interventions specific to the academic context.

Objective Measures:

Use quantitative data to supplement subjective data, especially physiological data, or amount of time spent on the screen. It can provide enhanced accurate results and can portray the technology usage of students more effectively.

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End Note	Reference Type	Reference

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