

Mapping The Impact of Technostress on the Psychological Well-Being of College Student

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Abstract:

Background: Technology has transformed the lives of people. It has become so important that it effects how we live, work, and learn. But they also bring challenges, and one of major challenge is technostress. It is vital to understand the trend and prevalence of technostress among college students.

Aim: This study aims to understand the impact of technostress on psychological well-being among college students in Guwahati, Assam.

Methodology: A sample size of 117 college students was taken within the age range of 18-25 years. It included both male and female participants through the purposive sampling method. The Technostress scale and Psychological Well-being Scale were used to assess college students.

Discussion: It has been observed that even though the overall mean of the sample on technostress is low and psychological well-being is average, there is considerable cases where technostress is high among some college students, and the overall psychological well-being of those students is affected.

Conclusion: This study emphasizes the growing issue of technostress among college students. It is essential to understand its causes and effects, so that educational institute can help students by adopting strategies for a healthier digital experience

Keywords: technostress, technology, college students, well-being, coping mechanism.

With rapidly changing pace of technology today, the integration of technology into the educational system through digital devices, online learning platforms, and virtual classrooms has transformed the way students learn and engage with academic content. The addition of has help guide students. Technology-enhanced learning (TEL). has provided greater accessibility, flexibility, various opportunities for learning, and efficiency in education. The amalgamation of technology in educational system may have revolutionized this field, but at the same time it has also brought forth a set of challenges. One of the major challenges is technostress. It is a phenomenon that has significantly impacted the psychological well-being of college students participating in technology-enhanced learning environments (Brod, 1984). This type of stressors can take a toll on students' psychological well-being.

Technostress, was first used by Craig Brod in 1984, refers to the negative psychological and physiological responses that people have when they use more technology than they can manage or adapt to the pressures of technological tools needed to. The fast pace of technological developments and increase

use of digital instruments in academics, can increase the vulnerability to technostress among college students (Aziz, et.al., 2021; Berger, et. al., 2016; Iskandar, 2021).

Information and communication technologies (ICTs) play an important role in technostress development and its manifestations (La Torre et al., 2019), representing potential sources of apprehension and anxiety or *techno-anxiety* (Marcoulides, 1989), which can result in *techno-phobia* (Rosen & Maguire, 1990), an aversion to computers usage. Furthermore, the relationship with these technologies can manifest in the form of extensive and compulsive usage or *techno-addiction* (Tarafdar et al., 2020). The experience of technostress is not only characterized by technostrain, but also excessive and compulsive use of ICT also contribute to it. (Susana Llorens & Eva Cifre (2013). Students are better equipped to deal with technostress when they have a higher higher level of experience with online classes as well as confidence in using computers. (Shwadhin Sharma, Babita Gupta, 2022).

In Assam there is a scarcity of scientific research evidence on technostress among college students in particularly. There is a significant concern in higher education and public health about the psychological well-being of college students. Understanding this phenomenon is crucial as it plays an important role in student's academic performance, personal development, and quality of life. As the youth are considered to be the torch bearer of the legacy and the future. The increased dependency on technology in educational system requires thorough understanding specially its origins, manifestations, and effects on students' psychological well-being. By elucidating this phenomenon, educational institutions, policymakers, and educators can develop measures and strategies to mitigate its impact among the college students. This will result in a more supportive and healthy learning environment for the college students. Hence this study aims to explore the impact of technostress on the psychological well-being of college students.

Review Of Literature

Raghu- Nathan et al. in 2008 identified 5 factors associated with technostress: *techno-complexity*, or the difficulty in understanding new digital tools, increases frustration and cognitive strain; while *techno-insecurity*, the fear of being left behind due to rapid technological advancements; *techno-overload* increased work load and demand to work faster in short duration due to new technology; *techno-invasion* constant connectivity with technology causes intrusion into personal time; *techno-uncertainty* the anxiety and frustration caused by the constant changes and updates in technology, requiring continuous learning and adaptation. Similarly, Tarafdar et al., 2015 found that new technology trend or update makes students feel pressurized to be available online. This blurs the lines between academic and personal life, and adds to their stress. In 2022 Zhao and colleagues research suggested that cognitive exhaustion is caused by excessive digital content involvement and as a result there is difficulty in focusing and processing information effectively. In 2021, Iskandar highlighted in his research that the Fear of Missing Out (FOMO), a phenomenon which is solely caused by social media engagement. As the name suggests the fear of missing out on any new trend or update in technology increases anxiety and the need to use technology compulsively.

La Torre and colleagues in 2020 expanded and deepened the understanding of technostress. According to their findings techno-stress is not merely a psychological experience but it is also a **physiological state**. Research supported this evidence, by showing how technostress in higher education became particularly intense during the COVID-19 pandemic (Sharma and Gupta,2022; Kulikowski, et.al., 2022.; Kasemy, et.al. 2022). They found that technology-enhanced learning (TEL), made students overwhelmed with

negative effects. When students were made to change to digital learning environments, it was noticed that stress, burnout, and dissatisfaction with academic life increased (Gómez-García et al., 2022).

Current research evidence on technostress have suggested a mixed finding when it comes to its severity and its impact. Some studies highlight that higher level of techno stress can lead to anxiety, depression, reduced academic performance, and social isolation (Cherian et al., 2020; Galvin et al., 2020; Wang et al., 2021; James et al., 2023) whereas others studies support good coping mechanism as a protective factor. Digital literacy is an important determinant of stress level among students. Research has reflected that students who have enough exposure and understanding of technologies experiences lesser stress as compared to those who have limited exposure and understanding. (Yao & Wang, 2023). Moreover, research suggest that factors like age, gender and IT skills influence technostress perception. (Berger et al., 2016).

In conclusion, technology has significantly helped the educational experience among students, but it has lingering psychological consequences. Technostress remains an important concern for college students as it impacts not only their mental health but also their academic performance. However, appropriate measures and intervention need to be developed for the students so that they can maintain balanced between their mental health, technology and academic performance.

Methods

Aim

This study aims to understand the impact of technostress on psychological well-being among college students in Guwahati, Assam.

Objective

The objectives of this study are

1. To find out the technostress level of the college students in Guwahati, Assam.
2. To find out the psychological well-being of the college students
3. To find out the correlation between technostress and the psychological well-being of college students

Sample

A sample of 117 college students was collected, which comprised individuals in the age group of 18-25. A purposive sampling technique was used to select the sample. The sample consists of 29 men, 87 females, and 1 from the other gender as shown in Fig. 1.

Tools

The tools used in the study are as follows

- Technostress Scale by Wang et al. (2020) which comprises 8 items on a 5-point Likert scale. It has demonstrated robust psychometric properties, including high internal consistency, validity, unidimensionality, and measurement invariance across students of different demographics. The scale demonstrates strong psychometric properties, thus being able to provide valid information of technostress for further diagnosis and interventions. The total score of the technostress scale ranges from 0 to 32. The higher the score, the greater the levels of technostress.
- The Ryff Scales of Psychological Well-Being is a theoretically grounded instrument that specifically focuses on measuring multiple facets of psychological well-being. These facets include the following: self-acceptance, the establishment of quality ties to other, a sense of autonomy in thought and action,

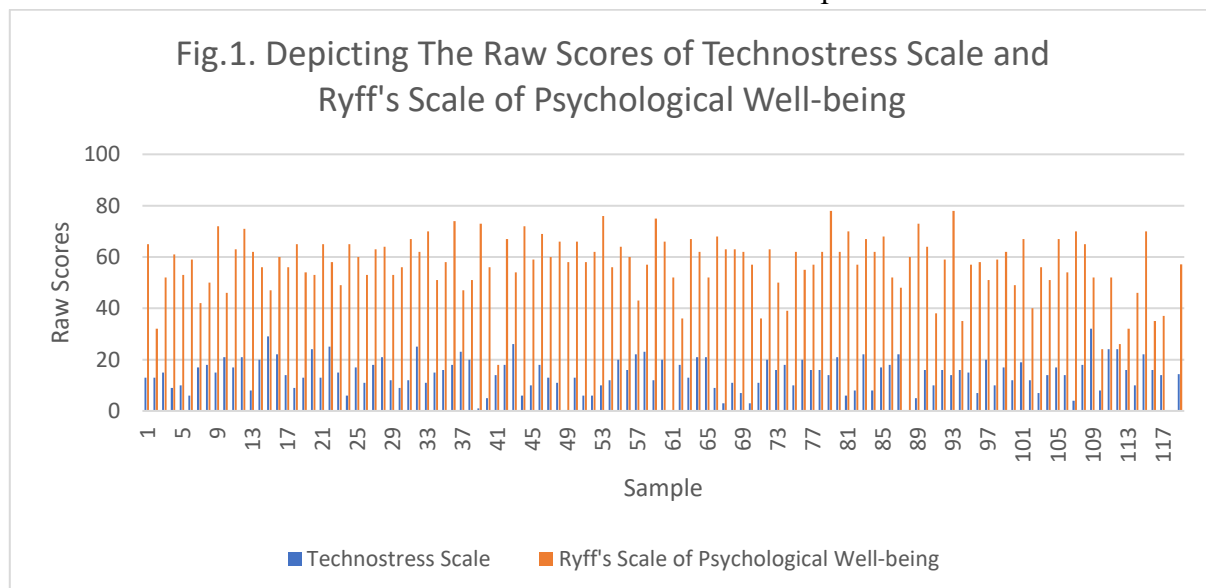
the ability to manage complex environments to suit personal needs and values, the pursuit of meaningful goals and a sense of purpose in life continued growth and development as a person. This straightforward inventory is easy to access and administer. Ryff's Scale of Psychological Well-being scale of 18 items with a 7-point Likert Scale. Test–retest reliability over six weeks returned coefficients ranging from .88 to .81, suggesting that responses to the questionnaire remain consistent over time in the absence of intervention.

Procedure

A sample of 117 participants was selected through purposive sampling. These participants were taken from colleges and universities in Guwahati. The participants were provided with information about the study and their consent was taken before the data was collected. All the doubts were cleared. The participants were provided with standardized instructions and the scales were shared. After the data was collected it was tabulated and analyzed.

Results And Analysis

After the data was collected from 117 participants, the raw score of each scale was calculated. Pearson's correlation coefficient was calculated to see if there was a relationship between the two variables.



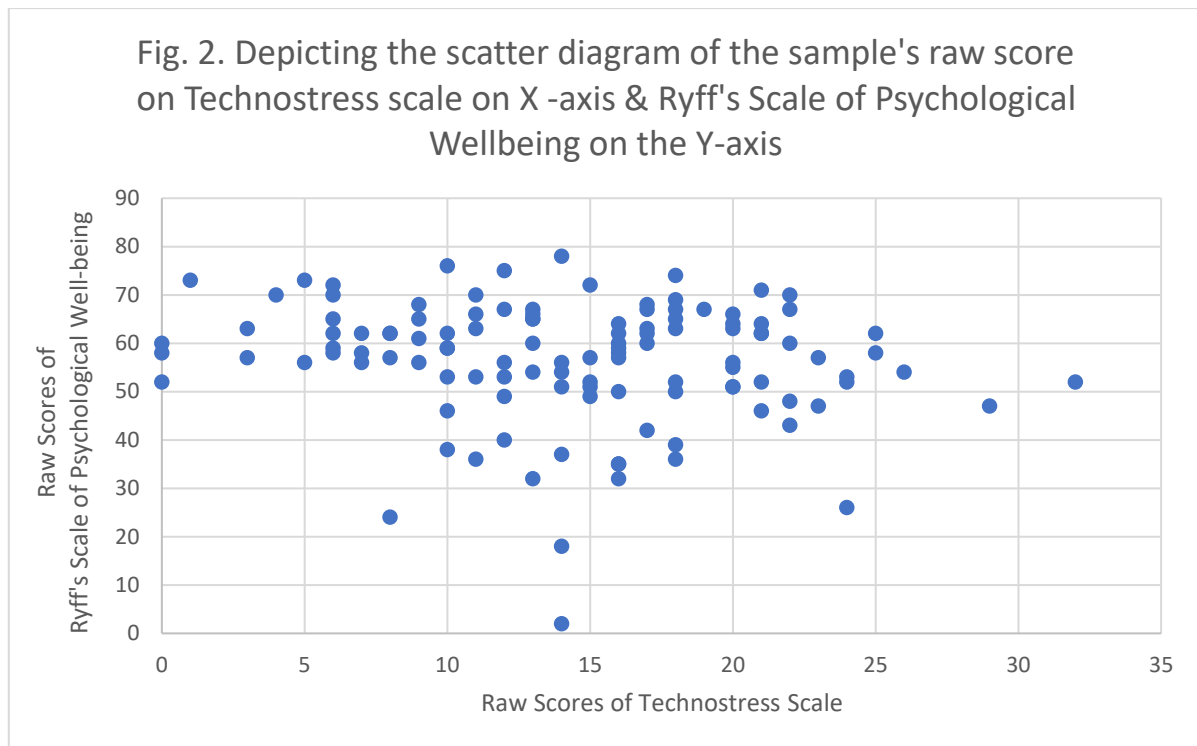


Table 1. Depicting the Correlation between Technostress Scale and Ryff's Scale of Psychological Well-being

Item No.	Scale	Sample (n)	Mean	SD	Correlation
1.	Technostress Scale	117	14.36	6.39	r = -0.14
2.	Ryff's Scale of Psychological Well-being	117	56.41	12.47	

Discussion

In today's world most things are digitally driven. Technology has become an essential part of our daily lives. While technology offers countless benefits, it also brings about challenges, and one in particular is technostress (Tarafdar, Pullins, & Ragu-Nathan, 2015, Qi; 2019; Zheng, et al., 2022). In the context of academic integration of technology in learning, technostress has become an important topic of concern. This study aims to explore the impact of technostress on the psychological well-being of college students. The impact was addressed by three key objectives: (1) to assess the technostress levels of college students, (2) to evaluate their psychological well-being, and (3) to examine the correlation between technostress and psychological well-being. In this study, a sample of 117 participants ranging in the age group of 18-25 years was taken. As seen in Fig. 1, 87 were females, 29 were males, and one of them was from the other category of gender. These participants were all college-going students. Each participant was given two scales to complete to measure their Technostress and Psychological well-being. The scores of these two scales (Technostress Scale and Ryff's Scale of Psychological Well-being) were scored and the mean and standard deviation were calculated.

According to Objective 1, the technostress levels among college students of Guwahati (Assam) were assessed. The mean score on the Technostress Scale, as shown in Table 1, was calculated to be 14.36, (SD- 12.47 and n- 117) which is below the average mean of 16. This suggests the level of technostress faced by college students is comparatively low. This could be because of various reasons. Technostress can be overcome by individual coping mechanisms and social support. (Abuzant, Sabbah, & Ghanem in 2022). And other factors like skill acquisition and repeated exposure (Wang, Tan & Li, 2020). The same can be said about the current study. These variables can explain low technostress observed.

Although the overall mean of the college students were low, some individuals scored above the mean. This indicates some outliers in the sample. This indication points towards the existence of this phenomenon among students from rural backgrounds (Yao & Wang, 2023). A study by Wang, Li, Ouyang, & Xu in 2021, on Technostress, Technology Enhanced Learning (TEL), and psychological well-being, supports this claim that students who joined TEL willingly or unwillingly experienced burnout.

To evaluate psychological well-being among college students (Objective 2), the mean score, as seen in Table 1, on Ryff's Scale of Psychological Well-being was calculated to be 56.4, (SD- 12.47, n- 117) which indicates that there is average psychological well-being among college students (Gloria, Castellanos, Scull & Villegas, 2009). However, this cannot be generalised to individual cases as there were participants with low scores on this scale as seen in Fig 1. Among these participants with low scores on Ryff's Scale of Psychological Well-being, there were participants whose technostress score was low and there were participants whose technostress was high. This suggests that there are individuals whose psychological well-being has been affected by technostress. On the contrary, there are individuals whose psychological well-being has been compromised due to other factors. Figure 1 displays the raw scores from both the Technostress Scale and Ryff's Psychological Well-Being Scale, illustrating that in some cases a high score on Technostress Scale corresponds with a low score on Ryff's Psychological Well-Being Scale, while in other cases both scores are high and vice versa. These factors can be psychological, environmental, physical, etc. but it does not pertain to technostress.

The correlation between technostress and psychological well-being was examined (Objective 3), Pearson's correlation coefficient was calculated. As shown in Table 1, Pearson correlation coefficient is $r = -0.14$. This correlation coefficient suggests a very weak negative correlation between the two variables (Technostress Scale and the Psychological Wellbeing Scale). This means that as scores on the Technostress Scale increase (indicating higher levels of techno-stress), scores on the Psychological Wellbeing Scale tend to decrease slightly (indicating lower levels of psychological well-being). However, since there is a weak relationship almost near zero, the scatter diagram plotted in Fig 4. also show the same trend with no clear linear trend. The scatter plot shows that the data points are dispersed This suggests that there is no strong correlation between technostress and psychological well-being. There is a mixed trend, some students report high levels of technostress with high psychological well-being, others students show high technostress with low well-being. Besides, certain cases reflect low technostress with low well-being. It can be said that there are many other variables that contribute to the poor psychological well-being of the participants. Cambell and colleagues' systematic review study in 2022, suggested that students in college face a lot of different challenges and stressors. College students have numerous risk factors for developing poor mental health which may or may not include technostress.

The present findings suggest that the technostress among college student is low in this sample. It's presence in specific cases warrants further investigation as it remains relevant for students wellbeing. The educational institute should focus on technostress as the expansion of technology into academics and

personal life can bring about innumerable challenges (Perera, 2021). They should also be able to identify students that are vulnerable and adopt strategies to address techno-stress among college students. (La Torre, De Leonardis, & Chiappetta, 2020; Gómez-García, et al, 2022). Tarafdar et al. (2014) studied employees in different companies for technostress. They found that in a company, employees who received and perceived organizational support had lower levels of *technostress*. Students can be engaged in digital detox programs, promoting healthy tech-habits, and providing adequate resources to deal with such kinds of stressors. (Tarafdar, et al., 2014, Upadhyay and Acharya, 2021). Finally, techno-stress, as a phenomenon, needs to be studied in details for wellbeing of an individual.

Conclusion

In conclusion, it has been seen that the prevalence of technostress among college students is a concerning issue. It significantly impacts the students' psychological well-being. This study which explores the level of technostress among college students and it suggests that in a few cases technostress was observed. In today's world, most people are technologically dependent and there is great pressure not only to adapt but also excel in this fast-paced environment. This issue of being constantly connected, information overload, and the demand for multitasking, can place a considerable load on students. It has resulted in heightened levels of stress, anxiety, and even depression among college students. Consideration for future studies, addressing this issue involving measures like promoting digital literacy, time management skills, and healthy tech-use habits among students. Furthermore, it is crucial to create a supportive environment that encourages open communication about technostress. Also provide adequate resources for stress management and mental health support is essential. Technology is vital in today's world but it should not be at the cost of our mental health.

Limitations

This study has potential limitations. The size of the sample may be small as compared to other quantitative studies. There were confounding variables that might have affected the research. The participants might have provided socially desirable answers. The data collected through the scales will not provide the complete aspects of the variables. The data could have been compared with school children as well. The study should have been compared with school students as well.

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