DIGITAL DYSTOPIA: SCRUTINIZING THE DARKER SIDE OF TECHNOSTRESS IN CONTEMPORARY LIFE

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Abstract

The constant and expeditious growth in digital technology has arisen a significant revolutionary phase in every aspect of an individual's life and contemporary society. This dynamic technological change has poured innumerable advantages as well as repercussions leading to the development of a darker side known as technostress. The present review paper has explored thoroughly the contemporary literature through varied perspectives and theoretical models accentuating the physiological, psychological, and societal impacts of technostress. The authors also investigated negative outcomes such as anxiety, burnout, isolation, etc. associated with technostress for which the article has mentioned the potential interventions and strategies to diminish the hazardous impact of technostress along with awareness regarding digital literacy and the importance of adopting healthy digital practices. By critically scrutinizing the darker side of technostress, this review article provides valuable insights into the challenges posed by the digital age and offers recommendations for individuals, organizations, and educational policymakers in fostering a more balanced and harmonious relationship with technology.

Keywords: Technology, Technostress, Digital Dystopia, Contemporary Life, Society

1. INTRODUCTION

The persistent and infinite proliferation of technology in every sphere of life has persuaded the constant involvement of individuals with it. For the successful accomplishment of daily tasks, rigorous engagement of individuals with information and communication technology (ICT) is indispensable. This constant engagement has given rise to concerns regarding the potential negative impacts of technology on individuals causing major disruption in society. This societal disruption caused by digitized technologies is termed digital dystopia ("Digital dystopia," 2023; Kockelman, 2020) which signifies the darker side of stressful technology i.e. technostress. According to available literature, stress is perceived by an individual in two forms either good or bad. Good stress which is known as 'eustress' is the optimistic perception of a stressful situation whereas bad stress known as 'distress' is a negative perception of a stressful circumstance (Le Fevre et al., 2003; Little et al., 2007). Similarly, technology is also related to good stress termed 'techno-eustress', and bad stress termed 'techno-distress' (Sethi et al. 1987). The "beneficial or positive effect on the functioning of the individual" instigates techno-eustress whereas techno-distress is associated with the "negative impact on the individual's functions with a consequent negative effect on the overall organizational productivity" (Sethi et al. 1987). Following this literature, the current review article focuses on comprehending the techno-distress aspects of technology by exploring technostress which has been

acknowledged extensively as a repercussion of technology associated with its 'dark side' (Ayyagari et al. 2011; Tarafdar et al. 2011).

Technostress is the topic of research since the 1980s which evolved from workplace automation to difficulties caused by employees in the use of ICT (Polakoff, 1982; Shu et al., 2011; Salazar-Concha et al., 2021). Initially, technostress as a term was coined by Craig Brod in 1984 who described it as "a modern disease caused by one's inability to cope or deal with ICTs in a healthy manner" (Ayyagari et al., 2011). Supporting Craig Brod, Ayyagari et al. (2011) and Ragu-Nathan et al. (2008)defined "technostress as a modern disease of adaptation caused by an inability to cope with new computer technologies, affecting mental health in a manner which may manifest as a struggle to accept computer technology, or as over-identification with computer technology".Chen and Muthitacharoen(2016), and Tarafdar et al. (2017) also supported this notion and depicted technostress as the stress faced by people while dealing with the use of ICTs. While not aligning with the above explanations of technostress as a disease Weil and Rosen (1997) elaborated their definition as "any negative impact on attitudes, thoughts, behaviors, or body psychology caused directly or indirectly by technology" and is "a perceived, dynamic adaptive state between the person and the environment, mediated by sociopsychological processes

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and influenced by the nature of the technological environment" (Caro and Sethi, 1985). Thus, technostress is the experience felt by an individual which depends on the attributes, adaptive abilities, surviving mechanism of an individual (Salazar-Concha et al., 2021)

While there has been growing research on technostress and its implications in the workplace, there is a significant lack of research regarding the broader impact of technostress in contemporary life. Existing studies primarily focus on technostress within organizational settings, neglecting its effects on individuals' well-being, relationships, and overall quality of life outside of work. This lack calls for an in-depth exploration of the darker side of technostress beyond the workplace, examining its implications on mental health, social interactions, personal relationships, and overall societal well-being. Thus, the present review paper aims:

1) to critically review and examine the existing literature on technostress.

2) to explore the broader societal dynamics of technostress.

3) to investigate the negative aspects of technostress and its consequences on individuals and the workplace.

4) to raise awareness about challenges, and risks as well as provide insights into coping strategies, interventions, and future directions regarding technostress.

2. LITERATURE SURVEY

To understand technostress, it is requisite to delve into its theoretical foundation to provide insights into its immediate theoretical models along with its organizational, psychological, physiological, and societal perspectives. Thus, this section reviews contemporary literature revolving around technostress providing its broader outlook from every horizon.

The P-T fit model

The situation-specific Person-Technology (P-T) fit model proposed by (Ayyagari, 2011) has its theoretical roots in People-Environment (P-E) fit model. The P-T fit model investigated the role of technology attributes in persuading stress among individuals. This model asserted that the technological characteristics such as "usability features: usefulness, complexity, reliability; intrusive features: presenteeism, anonymity; dynamic feature: pace of change" instigate stress by developing a misfit between environment demand- individuals' abilities and environmental values- individuals' supplies. The misfits are recognized in terms of ICT stressors (work-home conflict, privacy invasion, overload of work, role ambiguity, and job insecurity) i.e., technology characteristics are established as antecedents to stressors, which in turn are the strain predictors (Califf et al., 2015)

The Occupational Psychological Stress Model

The occupational psychological stress model proposed by Bamberg et al. (2003, 2012) is another theoretical model of technostress which is established by integrating the transactional stress model (Lazarus and Folkman, 1984), job-demand resource model of (Bakker and Demerouti,

2007, 2017) and major stress-strain concept given by Rohmert and Rutenfranz (1975). This amalgamated theoretical framework has been widely used in technostress literature (Delpechitre et al., 2018; Christ-Brendemühl & Schaarschmidt, 2020; Becker et al., 2021; Ma et al., 2021; Rayburn et al., 2021) considering job demands or stressors, person related risk factors, environmental and personal resources along with the primary-secondary appraisal, and problem or emotion-focused coping to comprehend technostress in the occupational setting.

The Transactional Theory of Stress (TTS)

TTS is regarded as one of the prominent theories of technostress (Cavanaugh et al., 2000) which was proposed by Lazarus and Folkman (1984). This theoretical model was established on four elements namely, stressors, strain, situational factors, and other organizational outcomes (Yin et al., 2014) specifying that transactions or interactions occurring between people and their environment takes place due to their ability to adjust and cope from various problems and challenges surrounding them. Explaining technostress from a transactional perspective Caro and Sethi (1985) defined it as "a perceived, dynamic adaptive state between the person and the environment, mediated by sociopsychological processes and influenced by the nature of the technological environment" proposing "stressors such as the ones created by technology influence performance through different types of appraisals and coping mechanisms" (Sharma and Gupta, 2023). Thus, the TTS theory of technostress clearly explained that a person's experience depends on the dynamic accommodative relationship between the technological environment and an individual being mediated by sociopsychological procedure influenced by the nature of the technological environment (Tarafdar et al., 2007)

Organizational Perspective of Technostress

From an organizational perspective, Tarafdar et al. (2007) and Salazar-Concha et al. (2021) specified that the struggles of individuals to cope with persistently changing ICTs and the dynamic physical, social, and cognitive necessities related to their use are the keen factors that are responsible for the cause of technostress in an organizational setting. This outlook demonstrated technostress as a phenomenon that encloses an amalgamation based on a situation of demand causing stress. Further, the introduction of ICTs in business organizations made a major shift from Enterprise Business model 1.0 to 2.0 which enhanced productivity and efficiency (Bilbao-Osorio, 2013)but also at the same is responsible for posing a threat at the workplace due to technological misuse, overuse, and abuse leading to technostress (Gaudioso et al., 2017) which is further severely impacts employee mental health, increases job stress and creates lack of social support (Giorgi et al., 2015; Mucci et al., 2016)

Physiological Perspectives of Technostress

Information and communication technology advancement has transformed individuals in numerous ways among them is the physiological state. The literature evidence reveals that technostress manifests a negative influence on

the physical health of people such as fatigue, headaches, and cardiovascular problems (Sommovigo et al., 2023) as well as gastrointestinal problems, insomnia, and elevated blood pressure (Salo, et al., 2018; Harper, 2000). Excessive exposure to computer technology also strains the eyes and instigates headaches, muscular dysfunction, and backlashes along with pain, numbness, and tingling effect in hands, arms, and wrists called Carpal Tunnel Syndrome while electromagnetic radiations from VDUs have been responsible for miscarriages and critical medical conditions such as cancer (Coghill, 1990). Thus, these studies illustrate that stress due to technological exposure can lead to serious health hazards and weakens an individual in varied physical ways.

Psychological Perspective of Technostress

Salanova et al. (2014) considered technostress as a negative psychological state namely, techno-addiction and techno-strain. Techno-addiction is related to workaholism which is the irresistible use and excess devotion of time to technology and also creating "have to" pressure and anxiety on not using ICTs. Whereas techno-strain is represented by four factors namely, anxiety (state of increased physiological activity and tension due to overwhelmed emotions of fear, agitation, and anxiousness), fatigue (state of decreased activity due to overload of information), skepticism (a distant, detached, discouraged, doubtful, burnout mirroring attitude towards technology use), and inefficacy (lowered self-efficacy due to anxiety, fatigue, and skepticism caused with the use of ICTs (Bondanini et al., 2020). Furthermore, technostress is also manifested through behavioral as well as psychological factors namely, techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty (Chen, 2015)

Societal Perspectives of Technostress

Technostress is an arduous phenomenon impacting people in distinctive forms and the societal impact is one among them. Contemporary literature has primarily focused on the influence of technostress on individuals in their workplace settings i.e. job satisfaction (Jena, 2015; Kot, 2022; Aktan and Toraman, 2022; Hwang and Cha, 2018; Ragu-Nathan et al., 2008), work engagement (Kot, 2022; Di Dalmazi et al., 2022; Okolo et al., 2018), productivity (La Torre, 2020; Tarafdar et al., 2005), organizational commitment (Taneja and Singh, 2018; Ungku Ahmad et al., 2014), burnout (Mahapatra and Pati, 2018; Khedhaouria and Cucchi, 2019), organizational culture (López Galicia and Gómez Ortiz, 2023; Wang et al., 2008), etc. These studies have widely focused on the technostress condition of individuals in their vocational aspect but lack in interpreting the technostress perception of individuals in their social life outside the workplace thus neglecting its effects on individuals' well-being, relationships, and overall quality of life concerning their societal aspect. This scarcity of research enlightens an opportunity for future research endeavors that may be conducted on technostress and its influence on societal factors concerning individuals outside their work life. Further, the lack of cross-culture studies on technostress also leaves a wide area yet to be explored to deeply comprehend differentiating technostress culturally.

Coping Strategies and Interventions

With the pacing Information Revolution, technostress has now become a global issue that needs to be tackled effectively. For these urgent interventions and coping strategies needs to be implemented to combat its severe repercussions. Thus, this section provides insight into the various steps that could be followed by individuals, organizations, and societies to encounter the burning impacts of technostress.

Coping Strategies for Individuals

- Mindfulness and meditation methods: Engaging in mindfulness and meditation practices can assist individuals in developing a heightened awareness of their interaction with technology, alleviating stress, and fostering a serene and balanced state of mind.

- Digital detox and disconnecting: Incorporating regular intervals of abstaining from digital devices and participating in technology-free activities can offer respite from constant connectivity and rejuvenate one's mental state of well-being.

- Balancing work and personal life: Setting clear boundaries between professional and personal life, such as refraining from checking work emails outside of designated work hours, can assist individuals in upholding a harmonious equilibrium between their work and personal spheres, thereby alleviating technostress.

Coping Strategies for Organizations

- Implementing flexible work arrangements: Granting employees the freedom to adopt flexible schedules, remote work alternatives, or compressed workweeks can empower them to exert better control over their time and utilization of technology.

- Promoting a healthy work-life balance: Motivating employees to prioritize their well-being beyond work commitments and offering supportive resources can effectively mitigate technostress and enhance overall job satisfaction.

- Reducing information overload and digital distractions: Introducing tactics such as prioritizing essential communications, adhering to email management protocols, and minimizing superfluous digital diversions can alleviate the weight of incessant information overload and reduce technostress.

Coping Strategies for Society

- Creating awareness campaigns about the dangers of technostress: Promoting media campaigns, educational programs, and workshops, to raise public consciousness regarding the consequences of technostress on mental health can cultivate a more mindful and balanced approach towards technology usage.

- Advocating for digital well-being policies: Promoting the development and implementation of policies by governments, organizations, and educational institutions that prioritize digital well-being can play a crucial role in mitigating the

detrimental impacts of technostress at a broader societal level.

- Promoting digital literacy and responsible technology use: Empowering individuals through education about the potential hazards and adverse outcomes associated with excessive use of technology, along with imparting responsible and mindful technology habits, can equip them with the knowledge and skills needed to make informed choices and effectively manage technostress.

Future Directions and Research Implications

- Longitudinal Studies: Engaging in longitudinal research to assess the enduring consequences of technostress on individuals' mental health and overall well-being can yield valuable knowledge regarding the accumulated repercussions of prolonged technology usage. Such studies contribute to establishing causal relationships and can guide the creation of specific interventions.

- Cross-Cultural Studies: Examining technostress in diverse cultural contexts can reveal cultural differences in the experience and manifestation of technostress. Comprehending the impact of cultural factors on individuals' perception and coping mechanisms for technostress can facilitate the development of customized interventions and strategies.

- Technostress and Ethical Considerations: Investigating the ethical ramifications associated with the utilization of technology, such as issues pertaining to privacy, addictive design elements, and the influence of algorithms, we can gain valuable perspectives on the wider societal consequences of technostress. Conducting research in this area can contribute to policy deliberations and the establishment of ethical guidelines aimed at safeguarding individuals' well-being within the digital realm.

- Technostress and Positive Technology Use: Exploring the potential advantages of technology implementation in fostering well-being and reducing technostress can pave the way for positive interventions through technology. By comprehending how technology can be purposefully designed and employed to improve mental health and resilience, we can gain a more nuanced outlook on the digital realm, emphasizing a balanced perspective.

- Technostress and Physical Health: By examining the correlation between technostress and physical health consequences, including disrupted sleep patterns and prolonged sedentary behavior, we can deepen our comprehension of the comprehensive effects stemming from excessive technology usage. Such research can provide insights for interventions aimed at addressing both mental and physical well-being.

Educational Implications

- Technostress Awareness Programs: Awareness programs and workshops can be organized by educational institutions to enlighten students about the possible dangers and adverse outcomes associated with excessive technology usage. Such programs can enhance students' understanding of technostress, encourage a well-rounded approach towards technology, and advocate for the adoption of beneficial digital habits.

- Digital Literacy Education: The article emphasizes the significance of endorsing digital literacy and responsible utilization of technology. It suggests that educational institutions should integrate digital literacy education into their curriculum, enabling students to acquire essential abilities for safely navigating the digital realm, critically assessing online information, and effectively managing technostress.

- Media Literacy Education: Education institutions must prioritize teaching media literacy in light of how media and digital platforms affect technostress. Imparting the skill of critical evaluation of media messages, comprehension of media bias, and identification of manipulative techniques utilized in digital content is a crucial aspect of education for students. This will make it easier for them to find their way through various forms of media, thus reducing their risk of developing technostress.

3. DISCUSSION AND CONCLUSION

The present review article explores the negative effects of excessive technology use and the prevalence of technostress in contemporary society by exploring distinctive technostress dimensions and their influence on organizations, society, and individuals as a whole. The review focuses on the necessity to acknowledge the deleterious impacts of technology overuse on the emotional, mental, as well as physical well-being of individuals, which can lead to the symptoms of anxiety, depression, burnout, and disrupted sleep patterns, thus providing various remedies, future research directions, and techniques for coping with technostress. It further suggests mindfulness and meditation techniques, digital detox, and Balancing work and personal life as effective coping strategies for individuals. For organizations, implementing flexible work arrangements, promoting work-life balance, and reducing digital distractions are recommended. At the societal level, creating awareness campaigns, advocating for digital well-being policies, and promoting digital literacy, are highlighted as crucial interventions. Moreover, the review suggests the need for longitudinal studies to assess the long-term effects of technostress, cross-cultural studies to explore cultural variations, and investigations into specific populations and work environments. Additionally, the article calls for research on the relationship between technostress and ethical considerations, positive technology use, and physical health, these research implications provide a roadmap for further understanding the complexities of technostress and developing targeted interventions. Furthermore, the educational implications discussed in the article underscore the importance of integrating digital literacy education, technostress awareness programs, social-emotional learning, and media literacy education into the educational system. Individuals, organizations,

and policymakers must prioritize mitigating technostress, promoting digital literacy, and fostering responsible technology use for a healthier coexistence to confront digital dystopia. By acknowledging the digital dystopian influence of technostress, we empower ourselves to shape a brighter digital future.

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