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Technostress and Digital Burnout in the Context of Occupational Therapy: Definition, Scientific Scope, and Relevance

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Abstract: The digital transformation significantly influences occupational therapy (OT) across various levels. Technostress (TS) and digital burnout (DB) emerge as consequences of excessive demands in managing information and communication technologies, negatively impacting job satisfaction among professionals, the therapeutic alliance, and clients' engagement in meaningful activities. This article provides a conceptual definition of TS and DB, examines these phenomena through a multidisciplinary lens, and synthesizes the current state of research. Based on these findings, implications for OT practice are proposed to address the challenges associated with digital transformation.

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Background

The increasing digitization permeates all areas of healthcare, making information and communication technologies (ICT) an indispensable part of daily life. While this development offers undeniable benefits, it also introduces new challenges (Liu, 2018). Empirical studies demonstrate that excessive demands posed by ICT can lead to novel stress phenomena, such as technostress (TS) and digital burnout (DB) (La Torre et al., 2019; Tarafdar et al., 2017; Pflügner, 2022; Pflügner, 2023). These phenomena not only have the potential to impair individual performance and quality of life but may also impact the quality of therapeutic care (Tawfik et al., 2021; Liu, 2018).

In the healthcare sector, these stress-related phenomena are gaining increasing attention (Tawfik et al., 2021; Wosny et al., 2023; Adam et al., 2023). However, occupational therapy (OT) has thus far inadequately addressed TS and DB as consequences of ICT-related overload (Liu, 2018; Jahrami, 2023). Efforts to raise awareness are evident (Liu, 2018; Larsson-Lund, 2018; Jahrami, 2023), but a systematic examination of these issues remains lacking in the field of OT.

Objective

This article explores the phenomena of TS and digital DB, situates them within a theoretical framework, and analyzes the current state of research. It examines professional resilience, the therapist-patient relationship, and client-centered interventions within the context of OT.

Methodology

The methodology is based on a systematic literature review encompassing empirical studies, systematic reviews, and theoretical models related to TS research. Through a structured analysis and

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synthesis of key findings, the results are linked to the domains of OT and discussed within the context of the Fourth Industrial Revolution (Liu, 2018).

Results

Definition and Conceptualization

TS is an independent psychological construct describing stress responses triggered by ICT use. First introduced by Brod (1984) and later refined by studies such as Tarafdar et al. (2007), TS is defined as a modern stress condition arising from the inability to adapt effectively to technological demands. TS encompasses psychological, physiological, and behavioral reactions, collectively referred to as Techno-Strain, and is characterized by distinct causes, symptoms, and theoretical models as an independent phenomenon.

DB is a consequence of repeated exposure to TS stressors. It manifests as persistent mental exhaustion, including cognitive overload, physical fatigue, and emotional frustration. Also known as Digital Overload, DB not only diminishes individual performance and quality of life but also negatively impacts job satisfaction and organizational commitment (Tarafdar et al., 2007; La Torre et al., 2019; Pflügner, 2022).

Research Status

Research on TS began with Brod (1984), who first described the psychological impacts of the computer revolution, laying the foundation for analyzing technology-induced stress factors. The TS model developed by Tarafdar et al. (2007) identifies five primary stressors that highlight the challenges associated with technology use: *Techno-Over*load refers to the overwhelm caused by increasing work demands, as ICT often fosters expectations of faster and more productive output. *Techno-Invasion* describes the loss of privacy and constant availability, disrupting the balance between work and personal life. *Techno-Complexity* encompasses the difficulties in managing complex technologies, which can lead to feelings of inadequacy or overwhelm. *Techno-Insecurity* represents the fear of being disadvantaged or losing one's job due to a lack of technological skills. *Techno-Uncertainty* reflects the uncertainties driven by continuous technological advancements, which necessitate constant adaptation. These stressors collectively illustrate the burdens associated with modern technology (Maier et al., 2019; Ragu-Nathan et al., 2008; Srivastava et al., 2015).

Beyond the five primary technostressors, additional factors have been identified. *Techno-Unreliability* arises from error-prone ICT (Fischer et al., 2021; Riedl et al., 2012), *Techno-Interruptions* from constant distractions (Addas & Pinsonneault, 2018; Tams et al., 2018), and *Techno-Conflicts* from psychosocial tensions caused by technical problems or differing expectations (Galluch et al., 2015). Based on these main stressors, various context-specific subtypes have been described (Fischer et al., 2021; Tams et al., 2018; Galluch et al., 2015; Harris et al., 2015). TS arises when technological demands exceed an individual's resources, leading to psychological, behavioral, and physiological consequences, such as negative emotions, exhaustion (Maier et al., 2019; Srivastava et al., 2015), performance impairments, and non-compliance with demands (D'Arcy et al., 2014; Tarafdar et al., 2010). Moreover, chronic stress from TS has been shown to increase stress hormone levels, posing potential health risks (Galluch et al., 2015; Tams et al., 2014; Riedl et al., 2012).

The relationship between technostressors and TS is non-linear and influenced by factors such as time pressure (Brown et al., 2014), personality traits (Srivastava et al., 2015), and social relationships (Harris et al., 2015). Recent studies suggest that technostressors can have both positive and negative effects, described as Techno-Eustress and Techno-Distress, respectively. While positive stressors promote creativity and performance, hindering stressors lead to frustration and exhaustion (Tarafdar et al., 2017; Benlian, 2020; Califf et al., 2020; Maier et al., 2021).

A systematic review by La Torre et al. (2018) characterizes TS as a phenomenon of ubiquitous ICT use, negatively affecting work satisfaction, life satisfaction, and productivity. The analysis of 105 studies reveals that work-related aspects (67%) have received more attention than private ones (25%), with specific TS symptoms addressed in only 10% of the studies. The authors emphasize the need for

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preventive strategies and prospective research to better understand the dynamics and long-term impacts of TS. Pflügner (2022, 2023) investigates the long-term consequences of TS, particularly its role in the development and prevention of DB. Her findings highlight the importance of preventive measures and support strategies to improve performance, quality of life, and resilience against technological stressors.

Discussion

Relevance for OT

Against the backdrop of ongoing digital and technological transformation and the current state of research, OT faces the challenge of addressing TS and DB as multidimensional fields of action. The authors highlight three central dimensions: the critical reflection and professional management of technology-induced stressors, the cooperative development of therapeutic relationships shaped by technological demands, and targeted interventions for clients whose participation and quality of life are impaired by TS and DB (Jahrami, 2023).

These dimensions are further explored as: (1) reflective engagement to strengthen resilience among practitioners, (2) interactive co-creation to enhance digital resilience within therapeutic relationships, and (3) direct interventions to address TS and DB in clients.

Reflective Engagement: Strengthening Resilience Against TS and DB

The increasing technological integration of administrative and organizational processes presents healthcare professionals, including occupational therapists, with a multifaceted array of demands. These demands amplify both cognitive and emotional burdens within professional settings (Tawfik et al., 2021). For example, electronic documentation systems, algorithm-driven evaluation tools, and organizational software require not only ongoing adaptation to technological innovations but also navigation within complex human-technology interaction spaces (Liu, 2018).

Empirical findings indicate that frustration in dealing with ICT serves as a significant predictor of emotional exhaustion, with long-term effects on job satisfaction and mental health (Tawfik et al., 2021). This evidence underscores the need for reflective engagement that not only analyzes personal stressors but also utilizes them as a foundation for strategic resilience-building (Pflügner, 2022; Pflügner, 2023).

Interactive Co-Creation: Enhancing Digital Resilience in Therapeutic Relationships

The digital transformation in OT necessitates ongoing adaptation of the therapeutic relationship, which is increasingly understood as a dynamic co-creation between therapist and client. With the integration of technology-supported interventions, such as teletherapy, robotics- and sensor-based rehabilitation, and digital health applications (eHealth, mHealth), therapeutic practice has become increasingly technologized. This transformation requires the effective and cooperative use of innovations that not only influence therapeutic outcomes but also shape the interaction dynamics and quality of the therapeutic alliance.

However, this technological integration also introduces specific challenges. The introduction and use of such technologies may generate TS and DB within the therapeutic setting. When technological demands exceed available resources, both the therapeutic alliance and the intrinsic motivation of therapists and clients may be compromised (Liu, 2018; Jahrami, 2023).

Direct Interventions: Addressing TS and DB in Clients

Working with clients affected by TS and DB illustrates the profound impact of these phenomena on quality of life and social participation. Clients increasingly face the challenges of digitalization and technological transformation in their daily lives. Vulnerable groups, such as individuals with neurological or cognitive impairments, are particularly at risk of cognitive overload, emotional frustration, and progressive limitations in social and occupational participation (Riedl et al., 2012; Liu, 2018). The long-term consequences of TS and DB may lead clients to seek OT to regain their

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occupational performance and quality of life. In this context, diagnostic and therapeutic approaches rooted in evidence-based practice are essential.

Successful interventions must aim to inhibit stress-inducing factors while fostering resources and digital resilience. This requires a specialized skillset that combines in-depth knowledge of TS and DB with the ability to develop personalized intervention strategies that alleviate client stress and simultaneously enhance their digital self-efficacy (Jahrami, 2023).

Implications for the Strategic Positioning of OT

The three dimensions underline the necessity of understanding TS and DB as central challenges in OT. Their impact on the profession, therapeutic relationships, and client interventions must be systematically analyzed and addressed to meet the demands of an increasingly technologized work and living environment. The multifaceted implications of TS and DB position OT at the intersection of professional reflexivity, interactive co-creation, and direct intervention. This triadic perspective calls for a strategic approach that not only systematically addresses practitioners' own stressors but also prioritizes empowering clients through interactive and individualized support. OT is encouraged to act not merely as a reactive profession but as a proactive agent within the digital transformation process, reinforcing its role as a key player in managing digital challenges.

According to the authors, the therapeutic relationship in OT provides an ideal setting for fostering digital self-efficacy and adaptive technology management through modeling, psychoeducational interventions, and client-centered support. This synergy between therapeutic competence and patient-centered empowerment represents a critical dimension of practice that must be strategically developed.

Conclusions

TS and DB represent key challenges within the context of digital transformation, increasingly gaining relevance for OT. The systematic integration of these topics into practice, research, and education offers an opportunity to enhance the professional significance of OT in an increasingly technologized work environment and to make a valuable contribution to managing digital stressors.

As distinct psychological constructs, TS and DB not only affect job satisfaction and resilience among professionals but also influence therapeutic relationships and clients' opportunities for participation. The analysis highlights that occupational therapists can strengthen their own digital resilience through reflective engagement with TS and DB. At the same time, fostering the interactive dynamics between therapist and client is essential to mitigate digital stressors and reinforce the therapeutic alliance. Furthermore, direct intervention with affected clients requires a specialized skillset to develop individualized strategies that promote digital self-efficacy.

OT has the potential to position itself as a proactive agent in the digital transformation process. By linking professional reflection, client-centered support, and evidence-based interventions, OT can play a pivotal role in addressing the challenges posed by TS and DB in an increasingly technologized world of work and daily life. Achieving this requires the strategic evolution of the profession, enabling it not only to respond but to actively shape the digital transformation.

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Data and Material Availability: All data used to support the conclusions are included in the referenced sources. Additional materials and conceptual documents can be requested from the authors. The project is also available on the Open Science Framework: DOI 10.17605/OSF.IO/DB4G6 (https://osf.io/db4g6/).

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