



# STUDIA DOCTORALIA

## PSYCHOLOGY AND EDUCATIONAL SCIENCE



### EDITORIAL

## Tech Fatigue - A new pandemic

Florinda Golu

<https://doi.org/10.47040/sdpsych.v12i2.129>

With the onset of the COVID-19 pandemic, much of the activity has shifted to the online environment. Maybe for Z generation, born in the context of iPhone, it was a simple transition, or it wasn't a transition at all, but only a preservation of its operating style, but for the older generations, this phenomenon came as an avalanche that shook with immense power all organizational structures. We are not necessarily referring here to the private organizational environment, but rather to environments less accustomed to technology. Working from home, learning from home, designing from home, interacting from home are nothing but activities that are done through technology, more precisely through online platforms.

If the work from home was initially enjoyed by certain individuals, after almost two years of using platforms and video programs, a general fatigue has set in, which specialists have called technology fatigue (or alternatively, with the necessary specificity: Zoom Fatigue, Online Fatigue, Tech Fatigue, Online Fatigue).

This type of fatigue is caused by the long time spent in front of the screens and can have detrimental consequences on the physical and mental health of people. Tech fatigue can be conceptualized as a psychological fatigue caused by the excessive use of the Internet and technology during homeworking, being exacerbated in the context of the COVID-19 pandemic. It is characterized by feelings of exhaustion and stress associated with the massive use of videoconferencing activities while managing private life at home (Molino et al., 2020; Palumbo, 2020).

The links between new technologies and stress has long been analyzed in psychological literature, being found under the name of technostress, and being defined as the stress felt as a result of multitasking, constant connectivity, information overload, frequent system upgrades and

consequent uncertainty, continuous relearning and job-related insecurity, and technical issues associated with the use of Information and Communications Technology (ICT) (Tarafdar, Tu, & Ragu-Nathan, 2010). Regarding stressors, five such factors have been identified (Tarafdar et al., 2007): techno-overload (the feeling of being forced by ICT to work faster and longer, or to change work habits), techno-invasion (due to the fact that ICT blurs the boundaries between work and private life), techno-complexity (determined by the feeling of inadequacy to the complexity of ICT), techno-insecurity (related to the threat of job loss) and techno-uncertainty (associated with the need for updating and continuous learning of new ICT variants). According to a recent systematic review (La Torre, Esposito, Sciarra, & Chiappetta, 2019), technostress implies the existence of mental and physical arousal, as well as negative feelings such as irritability, anxiety, exhaustion, cognitive symptoms such as poor concentration, mental fatigue and memory disturbances (Arnetz & Wiholm, 1997; Ragu-Nathan, Tarafdar, Ragu-Nathan, & Tu, 2008) and behavioral strain and sleep problems (Ayyagari, Grover, & Purvis, 2011).

Professor Jeremy Bailenson, founding director of the Stanford Virtual Human Interaction Lab (VHIL), examined the psychological consequences of spending many hours per day on virtual platforms (Ramachandran, 2021). He mentions four reasons why people experience Zoom fatigue. These are: i) too much eye contact - both intense eye contact and the size of the interlocutors' faces are unnatural; in physical interactions, people do not constantly look at the speaker, possibly take notes or look elsewhere; thus, there is additional pressure on the person addressing a group of followers; ii) the constant gaze of one own's face - it is as if we were constantly looking in the mirror; staring at the reflected image of our face for a long period of time leads to

an increase in the critical attitude towards oneself and implicitly to an increase of the negative emotionality; iii) reduced mobility - the cameras of laptops or computers do not allow the capture of images with a very wide spectrum, which causes the speaker to stand still in the same position; freedom of movement is unnaturally restricted; iv) cognitive load is higher during video conferencing; special attention must be paid to self-positioning in the center of the screen, the gestures become exaggerated in order to be well interpreted by the public; nonverbal language cannot be captured, and compensatory gestures are necessary for the speaker to make himself understood.

In academic settings, teachers have had to adapt quickly to the new form of interaction with students, so they are now among the population most severely affected by tech fatigue (Bonanomi, Facchin, Barelo, & Villani, 2021). During teachers' physical meetings with the students, they exchange verbal or nonverbal cues, implicitly communicating their attitudes and emotions. This enhances the quality of interactions. During video conferencing, more effort is needed to process nonverbal cues such as posture, body movements, haptic communication, and proxemics, leading to a paradoxical disconnection between mind and body (Petrillo, Capone, Caso, & Keyes, 2015). This phenomenon has negative consequences on episodic

memory and on personal and professional identity (Riva, Wiederhold, & Mantovani, 2021), with adverse effects such as exhaustion, social anxiety or stress. Moreover, joint attention, which involves coordination with others, is limited during online interactions because it prevents visual contact and exchange of views (students keep their cameras closed most of the time), which reduces group engagement, being necessary increased efforts to cooperate with the group (Kraut, Fussell, Brennan, & Siegel, 2002; Mundy & Newell, 2007).

In order to mitigate the effects of excessive online activity, special attention must be paid to work-life balance. Working spaces and hours must be very well defined. At the same time, self-care measures are needed, such as mindfulness, relaxation, or meditation exercises, as well as individualized practices specific to positive psychology (Carissoli, Villani, Riva, & Does, 2015; Gaggioli, Villani, Serino, Banos, & Bottle, 2019; Linardon, Cuijpers, Calbring, Messer, & Fuller-Tyszkiewicz, 2019).

At the same time, we should not underestimate the importance of videoconferencing, online platforms and other soft-wares facilitating human encounters, which would otherwise be limited by the restrictions imposed by the COVID-19 pandemic.

## REFERENCES

- Arnetz, B. B., Wiholm, C. (1997). Technological stress: Psychophysiological symptoms in modern offices. *Journal of psychosomatic research*, 43(1), 35-42. doi: 10.1016/s0022-3999(97)00083-4
- Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS quarterly*, 35(4), 831-858.
- Bonanomi, A., Facchin, F., Barelo, S., & Villani, D. (2021). Prevalence and health correlates of Online Fatigue: A cross-sectional study on the Italian academic community during the COVID-19 pandemic. *PloS one*, 16(10), e0255181. <https://doi.org/10.1371/journal.pone.0255181>
- Carissoli, C., Villani, D., & Riva, G. (2015). Does a meditation protocol supported by a mobile app. help people reduce stress? Suggestions from a controlled pragmatic trial. *Cyberpsychology, Behavior, and Social Networking*, 18(1), 46-53. doi: 10.1089/cyber.2014.0062
- Gaggioli, A., Villani, D., Serino, S., Banos, R., & Botella, C. (2019). Positive technology: Designing e-experiences for positive change. *Frontiers in psychology*, 10, 1571. doi: 10.3389/fpsyg.2019.01571
- Kraut, R. E., Fussell, S. R., Brennan, S. E., & Siegel, J. (2002). Understanding effects of proximity on collaboration: Implications for technologies to support remote collaborative work. *Distributed work*, 137-162.
- La Torre, G., Esposito, A., Sciarra, I., & Chiappetta, M. (2019). Definition, symptoms and risk of techno-stress: a systematic review. *International archives of occupational and environmental health*, 92(1), 13-35. doi: 10.1007/s00420-018-1352-1
- Linardon, J., Cuijpers, P., Carlbring, P., Messer, M., & Fuller-Tyszkiewicz, M. (2019). The efficacy of app-supported smartphone interventions for mental health problems: A meta-analysis of randomized controlled trials. *World Psychiatry*, 18(3), 325-336. doi: 10.1002/wps.20673
- Molino, M., Ingusci, E., Signore, F., Manuti, A., Giancaspro, M. L., Russo, V., et al. (2020). Wellbeing costs of technology use during Covid-19 remote working: An investigation using the Italian translation of the technostress creators scale. *Sustainability*, 12(15), 5911.
- Mundy, P., & Newell, L. (2007). Attention, joint attention, and social cognition. *Current directions in psychological science*, 16(5), 269-274.
- Palumbo, R. (2020). Let me go to the office! An investigation into the side effects of working from home on work-life balance. *International Journal of Public Sector Management*, 33(6-7).
- Petrillo, G., Capone, V., Caso, D., & Keyes, C. L. (2015). The Mental Health Continuum-Short Form (MHC-SF) as a measure of well-being in the Italian context. *Social indicators research*, 121(1), 291-312.

Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and empirical validation. *Information systems research*, 19(4), 417-433.

Ramachandran, V. (2021). *Stanford researchers identify four causes for 'Zoom fatigue' and their simple fixes*. February 23, 2021. Available at <https://news.stanford.edu/2021/02/23/four-causes-zoom-fatigue-solutions/>

Tarafdar, M., Tu, Q., & Ragu-Nathan, T. S. (2010). Impact of technostress on end-user satisfaction and performance. *Journal of management information systems*, 27(3), 303-334.

Tarafdar, M., Tu, Q., Ragu -Nathan, B. S., & Ragu-Nathan, T. S. (2007). The impact of technostress on role stress and productivity. *Journal of management information systems*, 24(1), 301-328.