

Submitted question to the Help Desk of the OSMET on February 8th, 2023.

Question: What are the best interventions to diminish technostress or the hyperconnectivity of workers?

The OSMET has proceeded with a systematic review of existing reviews and meta-analyses as well as articles on interventions for reducing technostress or hyperconnectivity. Annex-1 displays the methodological details of the answer to this question.

Definitions: Technostress is a professional stress associated to usage of information and communication technologies (American Psychological Association, 2023). Technostress comes in five dimensions or techno-creators: techno-overload (too much), techno-invasion (always connected), techno-insecurity (uncomfortable), techno-uncertainty (too often and unfamiliar) and techno-complexity (difficult) (Gaudioso & al., 2017; Ragu-Nathan & al., 2008). Hyperconnectivity is a similar concept to techno-invasion. Techno-invasion occurs when people feel they need to be constantly connected to be reachable anytime, anywhere.

Answer: The obtained results lead to the conclusion that the current state of the scientific literature does not make it possible to target effective interventions to reduce technostress or the hyperconnectivity of workers. Although the scientific literature on risk and protections factors regarding technostress is dense, it remains scarce regarding possible interventions aimed at reducing technostress and hyperconnectivity. We have found a single meta-analysis pertaining to a form of techno-invasion, which is technology-assisted supplemental work (TASW) (Kühner & al., 2023). TASW could be defined as *“role-prescribed tasks at home after regular work hours with the aid of technological tools”* (Fenner & Renn, 2010). This study confirms that interventions in this domain are rare and do not permit us to statute on their effectiveness with evidence-based scientific data. Even though the authors indicate what contributes or not to the emergence of TASW based on a meta-analysis of the relevant literature, they did not evaluate interventions in this regard.

The results of their meta-analysis are available in the following table:

Variables	Technology-assisted supplemental work	Reference
Availability expectations after normal working hours	+	Kühner & al. (2023)
"Tele pressure" urgency and concern to respond to messages from work	+	Kühner & al. (2023)
Support at work	NS	Kühner & al. (2023)
Control at work	+	Kühner & al. (2023)
Work demands	+	Kühner & al. (2023)
Satisfaction at work	+	Kühner & al. (2023)
Organizational engagement	+	Kühner & al. (2023)
Performance at work	+	Kühner & al. (2023)
Intention to leave	NS	Kühner & al. (2023)
TASW infrastructures	+	Kühner & al. (2023)
Nonwork support	NS	Kühner & al. (2023)
Conscientiousness	+	Kühner & al. (2023)
Positive attitude towards the TASW	+	Kühner & al. (2023)
Preference for multitasking	+	Kühner & al. (2023)
Controlled motivation	+	Kühner & al. (2023)
Segmentation preference	-	Kühner & al. (2023)
Boundaries control	-	Kühner & al. (2023)
Positive attitude towards ICT and TASW	NS	Kühner & al. (2023)
Work-family conflict	+	Kühner & al. (2023)
Gender	+	Kühner & al. (2023)

Legend: + (risk factor), - (protection factor), **NS** (non-significant).

However, through our systematic review we present the results of two quality interventions to prevent technostress, those of Chen et al. (2009) and Pfaffinger et al. (2022).

A synthesis of the obtained results is displayed in the following table:

Intervention type /profession/Country	Technostress / hyperconnectivity/ other variables	Reference
Resource workshop given during the implementation of an Enterprise Resources Planning (ERP)/public administration workers/Israel	Stress reduction (non-significant effect)	Chen & al. (2009)
Three applications: meditation, cognitive-behavioral, informational)/various industries workers/Germany	Digitalization-related stress (no stress reduction)	Pfaffinger & al. (2022)

Annex 1 Methodology

The OSMET has proceeded with a systematic review of existing articles, reviews and meta-analyses that were referenced on the following databases: OVID (EBM reviews, Cochrane database of systematic reviews, Embase, and Medline). The research covered from the beginning of the indexing of references in databases to the present day because technostress is older than the COVID-19 pandemic and already existed in the scientific literature. We used syntaxes comprising a composition of terms, key words, and intervention concepts such as *intervention* or preventive measure* or mental health program* or training or therapy or techno-inhibitor or technostress inhibitors*; technostress concepts such as *technostress or techno-overload or technostress creator or techno-creator or tele pressure or hyperconnectivity* and worker or teleworker concepts such as *workers or working population or workplace or telework* or telecommute**.

The bibliographical research was limited to studies written in French or in English. In addition, a manual search was performed. After extracting duplicates, a total of 48 references were sorted. Studies had to meet the following criteria: relate to technostress or hyper-connectivity and test interventions on workers populations (original studies or meta-analyses). After full reading of these, three studies corresponding to those research criteria were retained to answer the question asked through the Help Desk. Of those, 1 was a meta-analysis and 2 were interventions (pre-post with control groups and longitudinal randomized controlled trials (RCT)).

References:

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