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THE IMPACT OF COMMUNICATION OVERLOAD OVER TIME: EXPLORING MODERATED MEDIATION EFFECTS OF BURNOUT AND RECOVERY

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Abstract

This present research aims to analyze through a longitudinal study a moderated mediation model of burnout and recovery. Using a sample of 107 participants, we found the following: 1) a significant negative effect of communication overload T1 on psychological Detachment and relaxation T2, moderated by exhaustion in T1 2) a significant negative effect of communication overload T1 on relaxation T2, moderated by cynicism in T1 and 3) the effect between communication overload T1 and T3 is mediated by psychological detachment in T2 conditional upon the levels of exhaustion of individuals in T1. Implications for practice are provided at the end.

Keywords: Communication overload, psychological detachment, recovery, burnout.

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1. INTRODUCTION

Nowadays organizations are expanding the use of Information Communications Technologies in order to speed up their business processes (De Haes, Van Grembergen, & Debreceny, 2013; Garicano & Heaton, 2010). Consequently, this rise in digitization brings threats to the workforce as 50% of all jobs are in risk of being replaced by technological solutions in the future (Frey & Osborne, 2017; 2018). Additionally, workers have to constantly adapt to the use of new ICT related technologies in their daily work life which increases levels of stress and strain to employees (Ayyagari et al., 2011; Ragu-Nathan et al., 2008; Weil & Rosen, 1997). In the current pandemic crisis, many indicators show that the use of ICTs to work has increased tremendously, for instance from the early February to March 31, the number of weekly Teams mobile users grew more than 300 percent (Microsoft, 2020).

This stress that individuals experience due to IT use is defined as Technostress and our study focuses on technostress associated to the workplace use of mobile technologies such as smartphones, laptops, tablets or any other mobile device where it is possible to access email, apps, chats, calls and others to perform daily work tasks. The term Technostress, which is recognized in the literature was first introduced by Brod (1984) who defined it as "*a modern disease of adaptation caused by an inability to cope with new computer technologies in a healthy manner*" (p. 16). Technostress has emerged as an important negative impact of ICT use. The use of mobile devices means that employees are connected anytime-anywhere encouraging "always on" organizational cultures and work-home interference (WHI) henceforth contributing to increasingly stressful lifestyles and breaking the traditional boundaries of public and private domains of life which can change the meaning of being at home (Van Hooff et al., 2006; Chen & Karahanna, 2018).

Studies have shown that this "dark side" of mobile technologies contributes to increased burnout, fatigue and sleep complaints, reduced levels of job satisfaction, lower productivity and

innovation in work-related tasks, poor recovery and impaired performance (Van Hooff et al., 2006; Binnewies et al., 2009; Tarafdar et al., 2010;). As per Sonnentag, Venz, and Casper (2017) recovery from stress is highly important to health and well-being. Technostress has also been negatively associated with users' happiness (Salanova et al., 2013; Brooks, 2015). Thus, it is important for employees to cope with the increasing demands of IT use to restore personal resources and combat the negative effects of work pressure (Sonnentag & Zijlstra, 2006).

Karr-Wisniewski and Lu (2010) explain techno-overload with the principle of diminishing marginal returns stating that once an individual exceeds the optimum level of technology use, it can lead to negative outcomes, a curvilinear relationship. Moreover, techno-overload can be divided into three dimensions: information overload, (system) feature overload, and communication overload. For the purposes of our study, we will be focusing on the communication overload stressor because it is related to situations when employees are required to use multiple sources of communication such as email, instant messengers and mobile devices which distract from their daily activities (Karr-Wisniewski and Lu, 2010). Communication overload is different than information overload as communication is initiated by a third party while information is made by individuals who seek more information than what is necessary consequently affecting their decision-making performance (Karr-Wisniewski and Lu, 2010).

Building on this, through a longitudinal study we intend to address two issues: 1) to understand how the technostress process unfolds over time and 2) if there is a vicious cycle that helps perpetuate its effects; we want to examine how technostress compromises recovery. Thus, this current research adds to the literature by testing a model which takes in consideration mediated and moderated influences of recovery and burnout in the relationship between communication overload in three spans of time with at least one-week interval between each one.

2. LITERATURE REVIEW

2.1 Link between Communication overload in T1 and T3 and the mediating role of Recovery in T2

When individuals are at work they spend a large amount of energy and effort to accomplish the tasks given, which can use up their psychological resources (Meijman & Mulder, 1998) therefore it is necessary for individuals to unwind and replenish the resources that were depleted at work to be able to deal with future demands (Hockey, 1996; Zijlstra, 1996; Sonnentag & Zijlstra, 2006). According to Geurts and Sonnentag (2006) "*the essence of recovery is that the psychophysiological systems that were activated during work will return to and stabilize at a baseline level, that is, a level that appears in a situation in which no special demands are made on the individual*", (p.2) therefore the recovery process can be seen as the opposite of the strain process. The Effort-Recovery Model further characterizes the importance of the role of recovery and stresses the limitations of lack of recovery. It assumes that an individual can transition from acute to chronic load reactions such as fatigue of physiological activation if recovery is incomplete and if continued exposure to workload occurs (Meijman & Mulder, 1998).

According to the Conservation of Resources Theory (COR theory; Hobfoll, 1989), resources are a key operating mechanism by which well-being is influenced. These resources can be external such as objects or financial assets or internal resources which are more related to stress recovery on a day-to-day basis such as personal characteristics, energy or positive mood. In the assumption that individuals aim to obtain, keep and look after what they value, (Hobfoll & Lily 1993), the COR theory recognizes that to recover from stress people use resources in order to limit resource losses or to gain new resources (Hobfoll & Lily 1993). Consequently, we expect that (lack of) recovery may be an exploratory mechanism through which the cycle of losses caused by technostress is aggravated. Similarly, Richard and Rothstein

(2008) claim that stress management interventions meaning reducing stressors when exposed to stressor have a positive impact on health and wellness. It is, thus, particularly important to determine if a deficit in recovery levels makes individuals more vulnerable to the pervasive effects of technostress.

Sonnentag and Fritz (2007) argue that although recovery activities may be different for each individual, it is the underlying processes that elicit recovery. Four dimensions regarding how individuals experience recovery activities were included in the Recovery Experience Questionnaire (REQ) developed by Sonnentag and Fritz (2007), these are: *psychological detachment, relaxation, mastery and control.* Psychological detachment is defined as one's ability to detach mentally from work during off-job time (Sonnentag & Kruel, 2006); relaxation is related to one's involvement in leisure activities for the purpose of reaching a low activation level for example exercising (Hartig et al. 2003) or listening to music (Pelletier, 2004); mastery refers to the off-job experiences that contribute for the individual to cope with stressors by learning something new and lastly control is associated to how much an individual perceives he can influence his life events with his personal choices or actions (Sonnentag & Fritz, 2007). In summary, while psychological detachment and relaxation help in the recovery process as they entail that no more demands that lead to loss of resources will be required, mastery and control-oriented strategies facilitate recovery as they are aimed at gaining new internal resources (Sonnentag and Fritz 2007; Siltaloppi et al., 2009).

However, the long work hours culture that exist in organizations today may deter individuals' ability to recover from work as it is associated with bringing negative psychological and physical health difficulties (Taris et al., 2007; Burke & Cooper, 2008). Moreover, in today's work context the use of mobile technologies which consequently exposes employees to constant email notifications, task reminders and other forms of communication, has contributed to higher expectations for employees to be accessible 24/7 (Derks, van Mierlo,

et al., 2014). Furthermore, being constantly interrupted with email notifications or phone calls during non-work hours disturbs the recovery process as employees are less able to detach mentally from work (Sonnentag, Niessen, & Neff, 2012). According to Sonnentag and Bayer (2005) psychological detachment is crucial after stressful and demanding work situations. Barber & Santuzzi (2015) claim that techno pressure reverses the advantages that asynchronous communication technologies provide because employees will start to look at this mode of ICT use in the same way they perceive synchronous forms of communication that require an immediate real-time response. This leads to a lower sense of control and flexibility of workers over their response time. As employees prioritize mobile communications, this feeling of inescapable work impairs daily recovery. Tams et al. (2020) have found that workers are able to recover more effectively with communication overload when managers adjust the workplace environment and provide workers higher levels of control over their responses to T-M interruptions, meaning that they will be able to adapt work schedules and methods to respond to the demands of T-M interruptions, thus mitigating technostress. Moreover Park, Fritz and Jex (2011) found that ICT use at home is related with less psychological detachment from work. Derks, van Mierlo, and Schmitz (2014) has shown that work-related smartphone use is negatively associated to psychological detachment and Dettmers (2017) further demonstrated that psychological detachment mediates the relationship between extended work availability and emotional exhaustion.

Considering the limited number of literature studies regarding the relation between technostress and recovery, mostly only focused on psychological detachment, and in order to better comprehend the interaction of these variables it is reasonable to propose that: 1) communication overload in T1 is positively related with communication overload in T3, meaning that employees are expected to feel more or less overloaded with communication in T3 depending on the manner in which they perceive communication overload in T1; and 2)

recovery strategies in T2 act as a mediator in the relation between communication overload in T1 and T3, decreasing communication overload in T3.

Therefore, we expect the following:

H1: Communication overload in T1 is positively associated with communication overload in T3

H2a: The relationship between communication overload in T1 and T3 is mediated by psychological detachment in T2

H2b: The relationship between communication overload in T1 and T3 is mediated by relaxation in T2

H2c: The relationship between communication overload in T1 and T3 is mediated by mastery in T2

H2d: The relationship between communication overload in T1 and T3 is mediated by control in T2

2.2 The moderating role of Burnout

As previously mentioned, according to the literature, few have tested the direct association between stressors and recovery. Even assuming that communication overload T1 can influence communication overload T3 through recovery strategies in T2 because of the reasons pointed out, this relationship may only exist or may be stronger in the presence of other variables that can act as moderators. Therefore, we expect that people with burnout are more vulnerable to cope with these technostressors.

Burnout is a stress-related concept and can be defined as "(...) *a reaction to chronic occupational stress characterized by emotional exhaustion (i.e., the draining of emotional resources), cynicism (i.e., a negative, callous, and cynical attitude towards one's job) and lack of professional efficacy (i.e., the tendency to evaluate one's work negatively).*" (p.166.

González-Romá, V. et al, 2006). Similarly, according to Maslach et al. (2001) burnout is defined by the three dimensions of exhaustion, cynicism, and inefficacy due to continued exposure to emotional and interpersonal stressors on the job. For the purposes of this study we focus on the emotional exhaustion and cynicism dimensions only. According to Schaufeli & Enzmann (1998) and Schaufeli, Maslach, & Marek (1993) the reasons for burnout can be divided into three categories: individual (when burnout is seen as the result of intrapersonal factors); interpersonal (if burnout is the result of difficult work relationships with others); and organizational (if burnout is seen as the outcome of job discrepancy). Burnout can be manifested as lower productivity, substance abuse, poor decision making from workers, and may even lead to suicide (Shanafelt et al., 2003) and it has the potential to affect all occupations (Lastovkova, Carder, & Rasmussen, 2018). Moreover, it has also been associated to decreased life satisfaction (Burke & Greenglass, 1995) and depression (Hakanen et al., 2008).

Studies have shown that recovery is important to one's health and well-being and lack of recovery leads to increased levels of stress, burnout and other symptoms of poor well-being (Hobfoll, 1989; Sonnentag, Venz, & Casper, 2017). Although there is a large body of research regarding the causes, symptoms and consequences of burnout "*the focus tended to be on investigating correlations between variables rather than individual developmental trajectories of burnout and recovery*" (Samilnen et al., 2017; Mäkikangas & Kinnunen, 2016). The job demands-resources model, used for human resource management, states that although work engagement, exhaustion, and burnout are developed in environments that have high job demands, burnout occurs in a situation where workers do not have sufficient job and, or personal resources. On the other hand, Derks, van Duin, et al. (2014) have found that smartphone use during non-working hours, due to the long hours work culture in today's organizations, is positively related with emotional exhaustion which consequently deters the individuals' ability to recover from technostress.

Therefore, this present research proposes that Burnout in T1 may play a moderating role in strengthening the relationship between Communication overload in T1 and Recovery strategies in T2.

Therefore, we expect the following:

H3a: The relationship between communication overload T1 and detachment T2 is moderated by burnout in T1

H3b: The relationship between communication overload T1 and relaxation T2 is moderated by burnout in T1

H3c: The relationship between communication overload T1 and mastery T2 is moderated by burnout in T1

H3d: The relationship between communication overload T1 and control T2 is moderated by burnout in T1

Assuming Burnout in T1 moderates the relationship between Communication overload T1 and recovery strategies T2, it is likely that Communication overload T1 should also influence Communication overload T3, through a decrease in Recovery in T2, conditional on Burnout levels in T1.

Based on that reasoning, we suppose the following:

H4a: The indirect effect of communication overload T1 in T3 through detachment T2 is moderated by burnout T1, so that the indirect effect is stronger when burnout T1 is higher

H4b: The indirect effect of communication overload T1 in T3 through relaxation T2 is moderated by burnout T1, so that the indirect effect is stronger when burnout is higher.

H4c: The indirect effect of communication overload T1 in T3 through mastery T2 is moderated by burnout T1, so that the indirect effect is stronger when burnout is higher.

H4d: The indirect effect of communication overload T1 in T3 through control T2 is moderated by burnout T1, so that the indirect effect is stronger when burnout is higher.

In the Figure below (Figure 1) is presented a conceptual framework that summarizes the defined hypothesis:

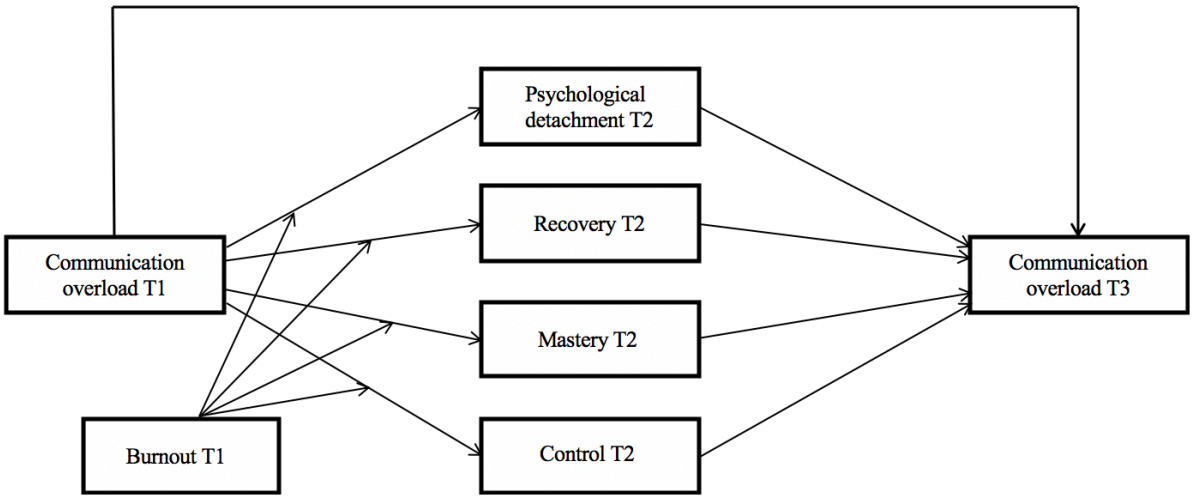

Figure 1 – Research model

3. METHODOLOGY

3.1 Sample and Procedures

The sample of respondents is a convenience sample that was developed through snowball sampling strategy: Participants from researchers' personal network received an invitation to answer the survey on-line (with a link to *qualtrics*) and share the invite with other workers who could also be interested in taking part of the study. Data was collected during the end of March and the beginning of April 2020, which matched the beginning of the lockdown period in Portugal. In that period, most workers were working from home and communication technologies were central tools to work from home. Data was collected in three moments separated by at least one week each. Participants were asked to include their email in the questionnaires so that they could receive the following surveys and also to allow the organization of questionnaires per participant across time. The questionnaire included a cover letter with the main goals of the study and participants gave their informed consent. Anonymity

and confidentiality were ensured, and participants were informed that later they would receive a report with the main results of the study. In the first moment of data collection, 194 individuals answered the survey (Time 1), of which 133 also answered in the second moment (Time 2), and 107 in Time 3. Dropout analyse revealed no significant differences at T1 among any of the study variables between those who dropped out and those who did not.

The final sample included 107 employees. Out of these 107, about one third had been employed in that company for less than one year (32.7%), another third (34.6%) from 1 to 3 years, 9.3% from 3 to 5 years, 10.3% from 5 to 10 years, and 13.1% had been employed in that company for more than 10 years. In terms of demographics, 68 were female (63.6%) and the average age was 33.5 years (S.D. = 10.8).

3.2 Measures

Communication overload was measured with 4 items developed by Karr-Wisniewski and Lu (2010). Sample items are: "I often find myself overwhelmed because technology has allowed too many other people to have access to my time" and "I waste a lot of my time responding to emails and voicemails that are business-related but not directly related to what I need to get done". Participants responded in a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Responses yielded acceptable internal consistency at T1 and T3 (Cronbach's alpha = .75 and .76, respectively).

Psychological detachment included 4 items developed by Sonnentag and Fritz (2007) in the recovery experience questionnaire. Sample items are: in my free time after work "I don't think about work at all" and "I get a break from the demands of work". Participants responded in a five-point Likert scale, ranging from 1 (totally disagree) to 5 (totally agree). Responses yielded good internal consistency at T2 (Cronbach's alpha = .84).

Relaxation was evaluated with 4 items from Sonnentag and Fritz's (2007) recovery experience questionnaire. Sample items are: in my free time after work "I use the time to relax" and "I take time for leisure". Participants responded in a five-point Likert scale, ranging from 1 (totally disagree) to 5 (totally agree). Responses yielded good internal consistency at T2 (Cronbach's alpha = .88).

Mastery was measured with 4 items from the recovery experience questionnaire (Sonnentag & Fritz, 2007). Sample items are: in my free time after work "I learn new things" and "I do something to broaden my horizons". Participants responded in a five-point Likert scale, ranging from 1 (totally disagree) to 5 (totally agree). Responses yielded good internal consistency at T2 (Cronbach's alpha = .90).

Control included 4 items from the recovery experience questionnaire (Sonnentag & Fritz, 2007). Sample items are: in my free time after work "I determine for myself how I will spend my time" and "I take care of things the way that I want them done". Participants responded in a five-point Likert scale, ranging from 1 (totally disagree) to 5 (totally agree). Responses yielded good internal consistency at T2 (Cronbach's alpha = .88).

Exhaustion was measured using 5 items from the *Maslach Burnout Inventory- General Survey* (MBI-GS; Maslach & Jackson, 1986). Sample items are: "I feel emotionaly drained from my work" and "I feel tired when I get up in the morning and have to face another day on the job". Participants responded using a seven-point Likert scale, ranging from 1 (never) to 7 (always, every day). Responses yielded good internal consistency (Cronbach's alpha = .89 in T1).

Cynicism was measured using 5 items from the *Maslach Burnout Inventory- General Survey* (MBI-GS; Maslach & Jackson, 1986). Sample items are: "I have become less enthusiastic about my work" and "I doubt the significance of my work". Participants responded

using a seven-point Likert scale, ranging from 1 (never) to 7 (always, every day). Responses yielded good internal consistency (Cronbach's alpha = .87 in T1).

Control Variables. In this study we used gender and tenure in the company to control for potential confounding effects. Gender and tenure have been found to be correlated with feelings of burnout at work and individuals' capacity to adapt to stress and develop strategies to deal with it (Schaufeli & Buunk, 2003). Accordingly, gender was coded with 1 coded for female and 2 for male, and tenure was coded as an ordinal variable where 1 means "less than 1 year", 2 "between 1 and 3 years", 3 "between 3 and 5 years", 4 "between 5 and 10 years", and 5 "more than 10 years".

3.3 Statistical analysis

To test the hypotheses we used regression-based path analysis with PROCESS software, which is a computational tool for estimating and probing interactions and the conditional indirect effects of moderated mediation models (Hayes, 2012; Preacher, Rucker, & Hayes, 2007).

Process is a SPSS software macro that allows the test of the indirect effects ab, with a normal theory approach (e.g., the Sobel test) and with a bootstrap approach to calculate Confidence Intervals (CI). According to MacKinnon, Lockwood, and Williams (2004) bootstrapping is recommended. Through the application of bootstrapped CIs, it is possible to avoid power problems introduced by asymmetric and other nonnormal sampling distributions of an indirect effect. We computed Model 7 in PROCESS using 10000 bootstrap samples, 95% bias-corrected bootstrap confidence intervals for all direct, indirect and moderation effects. Predictor variables were mean-centered (Aiken & West, 2001), and the conditional indirect effect was analyzed at different values of the moderator variable: the mean, one standard deviation above, and one standard deviation below the mean. Control variables were included

all analysis. With Model 7 we integrated exhaustion and cynicism (moderator variables) into the model and empirically tested the possibility of a statistically significant indirect effect on how communication overload gets carried out in time through impaired recovery strategies being contingent on the value of burnout in workers.

4. RESULTS

Table 1 presents the means, standard deviations and the intercorrelations of the researched variables. Besides this Table 2 (see Appendices) presents the regression results for mediation and mediated moderation (exhaustion) and Table 3 (see Appendices) shows the regression results for mediation and mediated moderation (cynicism).

Table 1 - Descriptive statistics and study variable inter-correlations.

	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. Gender [a]											
2. Tenure [b]			.10								
3. C.Over T1	3.30	.86	.08	.04							
4. Exhaustion T1	3.87	1.53	-.10	-.10	.36***						
5. Cynicism T1	3.23	1.61	.14	-.25**	.32***	.56***					
6. Psy.Detc T2	2.97	.90	-.04	-.14	-.26**	-.07	.11				
7. Relaxation T2	3.75	.76	.04	-.02	-.21*	-.28**	-.20*	.46***			
8. Mastery T2	3.79	.73	.03	.04	.00	-.23*	-.12	-.02	.30**		
9. Control T2	3.89	.67	-.14	-.01	-.14	-.23*	-.25**	.19	.39***	.23*	
10. C.Over T3	3.27	.79	-.01	-.06	.64***	.36***	.15	-.34***	-.12	.11	-.01

Note. C.Over = Communication overload; Psy.Detc = Psychological detachment

[a] Gender was coded with 1 for female and 2 for male. [b] Tenure was coded as an ordinal variable where 1 means "less than 1 year", 2 "between 1 to 3 years", 3 "between 3 to 5 years", 4 "between 5 to 10 years", and 5 "more than 10 years".

*p < .05; **p < .01; ***p < .001

4.1 Test of Mediation

Hypothesis 1 proposed that communication overload in T1 was associated with more communication overload in T3, and Hypothesis 2 that this relationship was mediated by psychological detachment (H2a), relaxation (H2b), mastery (H2c), and control (H2d). Table 1 shows that communication overload in T1 and in T3 were positively associated (r=.64, ρ<.001),

thereby supporting H1. In addition, we found that communication overload in T1 (Table 2 and 3) was negatively associated with psychological detachment in T2 (B=-.25, t=-2.40, p<.05) and with relaxation in T2 (B=-.10, t=-1.13, p<.05), but not with mastery in T2 (B=.08, t=.91, p=.36) or with control in T2 (B=-.04, t=-.45, p= .66). Furthermore, in the mediation analyses, communication overload in T1 and psychological detachment in T2 showed significant direct paths to communication overload in T3 (Table 2: B=.56, t=7.96, p<.001; and B=-.22, t=-2.89, p<.001, respectively) whereas relaxation, mastery, and control in T2 did no (Table 2: B=.08, t=.84, p=.41; B=.07, t=.87, p=.39; and B=.08, t=.88, p=.38, respectively). Indeed, we observed a significant indirect effect of communication overload across time through psychological detachment in T2 (Table 2: f effect =.06; 95% CI from .01 to .13). Therefore, results supported hypothesis 2a, but not 2b, 2c, and 2d.

4.2 Test of Moderated Mediation

Tables 2 and 3 also present the results for the moderator effect of burnout (exhaustion and cynicism), and the conditional indirect effects of communication overload throughout time. Results indicated that the cross-product terms between communication overload and exhaustion on psychological detachment and relaxation were significant (Table 2: B=-.19, t= -2.97, p<.001, and B=-.14, t= -2.54, p<.01, respectively), but not on mastery and on control strategies (Table 2: B=.00, t= -.05, p=.96, and B=-.01, t=.11, p=.91, respectively). As for the cross-product terms between communication overload and cynicism on relaxation was significant (Table 3: B=-.11, t= -2.11, p<.05), but not on psychological detachment, on mastery and on control strategies (Table 3: B=-.05, t= -.83, p=.41; B=-.06, t= -1.23, p=.22; and B=-.03, t=-.68, p=.50, respectively). The interaction effects that are significant are represented in Figure 2, 3, and 4. Results indicate that when workers have low levels of exhaustion, the detrimental effects of communication overload on psychological detachment and on relaxation strategies are not

significant. However, when individuals report higher levels of exhaustion, we observe a significant drop of both psychological detachment and relaxation strategies when communication overload increases. We observe a similar pattern of interaction effect of cynicism for relaxation. Therefore results partially supported H3a , supported H3b, but did not support H3c and 3d.

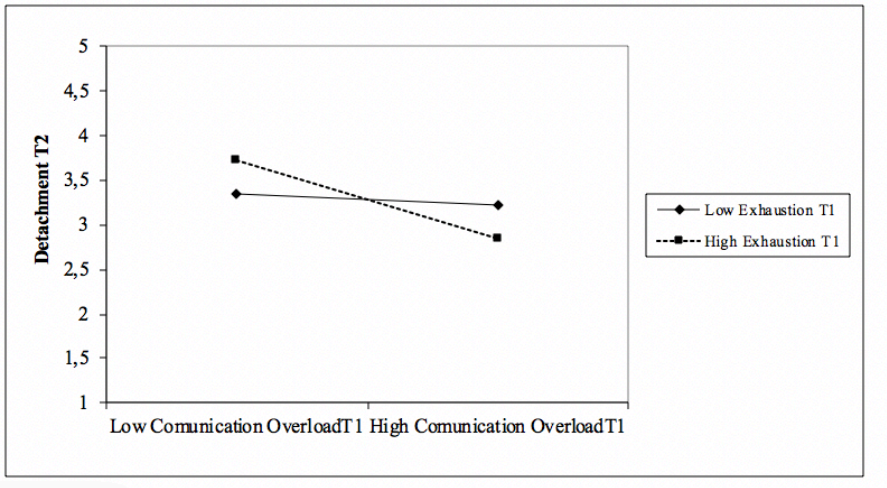

Figure 2 – Interaction of Communication Overload T1 and Exhaustion T1 on Psychological detachment T2.

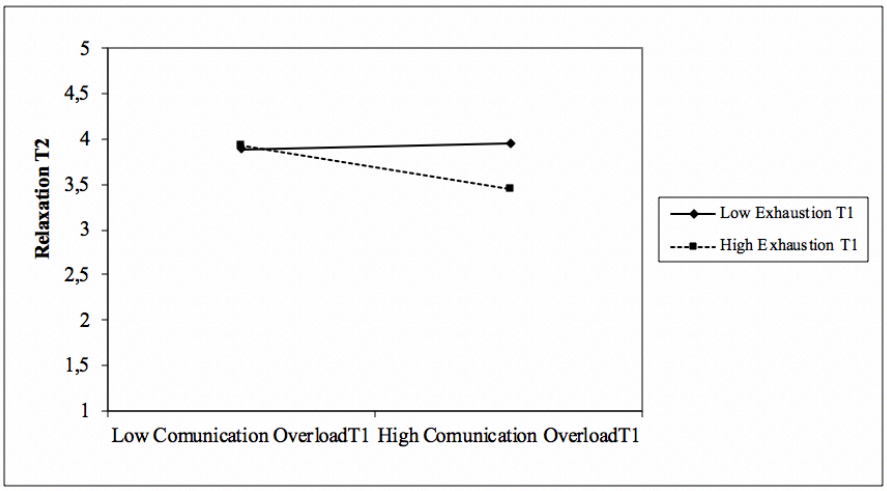

Figure 3 – Interaction of Communication Overload T1 and Exhaustion T1 on Relaxation T2.

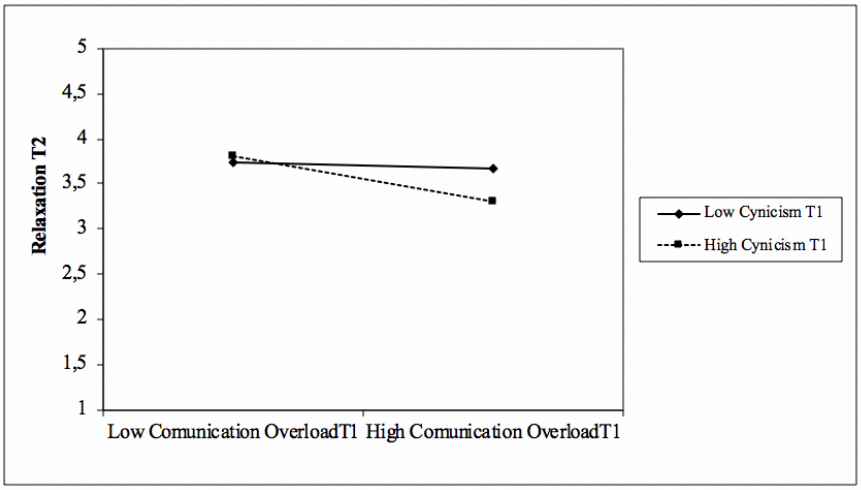

Figure 4 – Interaction of Communication Overload T1 and Cynicism T1 on Relaxation T2.

Although results show that communication overload interacted with exhaustion and cynicism in T1 to influence psychological detachment and relaxation in T2, and that psychological detachment mediates the relationship between communication overload in T1 and T3, these analyses do not directly assess the proposed moderated mediation. Therefore, we examined the conditional indirect effect of communication overload over time (through psychological detachment in T2) at three levels of exhaustion (Table 2): the mean (0.00), one standard-deviation above the mean (1.53), and one standard- deviation below the mean (-1.53).

Results supported a conditional indirect effect of communication overload through out time via impaired psychological detachment in T2 when workers reported higher levels of exhaustion (Table 2). Results indicated that the conditional indirect effects (based on moderator values at mean and +1 standard-deviation) were positive and significantly different from zero. Thus Hypothesis 4a is partially supported, such that the indirect and positive effects of communication overload throughout time (through impaired psychological detachment) were stronger for individuals with higher exhaustion.

5. DISCUSSION

This study occurred due to the lack of longitudinal studies in this area (Sonnentag & Fritz, 2007). Many cross-sectional studies have examined the relationship between stress, burnout and recovery**.** This study advances the research as it uses a longitudinal design providing novel evidence for the order of the associations between communication overload, recovery strategies and burnout. By conducting a longitudinal study during the beginning of the lockdown period in Portugal we were able to examine how communication overload unfolds overtime, if communication overload compromises recovery and if there is a vicious cycle that helps to perpetuate its effects. As such, we performed a moderated mediation analysis on the effects of burnout and recovery from where we can depict several contributions to the HRM literature.

Firstly, the study found that communication overload in T1 is positively related to communication overload T3 and that psychological detachment in T2 mediates the relationship between communication overload over time. Furthermore, consistent with the mediation model, the results indicate a negative relationship between the communication overload in T1 and psychological detachment in T2 and a negative direct effect between psychological detachment in T2 and communication overload in T3.

Several authors have mentioned the negative effects of the multitude of communication methods. This finding suggests that high communication overload in T1 is associated with high communication overload in T3. As stressed by McFarlane and Latorella (2002), workplace interruptions are disruptive and affect adversely job performance and efficiency, which results in higher stress. In fact, when managers require employees to use technology to enable constant connection between them, colleagues and customers, employees feel that they are never free of technology and are always “on call”. This creates role stress in the form of both role conflict and role ambiguity (Brillhart, 2004). This finding is also consistent with Barley et al. (2011)

that states that email and communication technologies increases dependency and generates stress because they increase the amount of work that people must handle, the more people spent checking their email, the greater was their feeling of being overloaded. Consequently. this means employees will work longer and henceforth this contributes to working after leaving the workplace.

The present findings contribute to the Conservation of Resources and Effort-Recovery Theories. Hobfoll (1989) states that individuals foster to obtain new resources when facing danger of resource losses or to gain new resources. Moreover, according to Effort-Recovery theory (Meijman & Mulder, 1998) when individuals detach from work during evening hours, their stress-related acute load reactions go back to pre-stressor levels thus avoiding investing in compensatory effort. Consequently, this leads to improved health, well-being and performance (Sonnentag, 2001, 2003; Binnewies, Sonnentag, & Mojza, 2009).

However, the present study provides evidence that the ability to psychological detach from work in T2 in order to reduce communication overload in T3 is compromised by the level of communication overload in T1. Overall, the present study suggests that high communication overload in T1 decreases psychological detachment in T2, which consequently will increase communication overload in T3. Therefore, this study shed further light in the stress detachment model and supports the idea that being constantly connected to work through technological tools increases workloads, which in turn affects the possibility of reaching adequate levels of detachment. This finding agrees with Croon et al. (2004) that suggested that the more employees face job stress, the harder it is for them to psychologically detach from work, even though they are in a particular need for detachment and recovery and supports Park, Fritz and Jex (2011) research that observed that ICT use at home is associated with less psychological detachment from work.

Another possible reason that explains why communication overload in t1 compromises psychological detachment and relaxation levels in T2 is that the rise in usage of communication technologies such as email, notifications, virtual meetings as management tools has removed the boundaries between physical spaces and work responsibilities. Furthermore, email overload interrupts concentration. Jackson et al. (1999, 2001b, 2003) found that it requires on average 64 seconds to restart working again after checking an email and that this rate of constantly checking emails causes 96 interruptions in an eight-hour-day. This leads to extended working hours, wasting resources for recovery and making it more difficult to detach from work. On the other hand, Derks and Bakker (2015) claimed that although intensive smartphone users contribute to work-home interference (WHI), if they engage in psychological detachment and relaxation strategies during after-work hours to recover from stressors they will experience lower WHI and lower work-family conflict.

The present study also brings implications to the JD-R model (Bakker & Demerouti, 2007, Demerouti et al., 2001). As communication overload increases, communication shifts from being a job resource to become a job demand, hence affecting negatively the employee's role stress. Consequently, this may lead to lower energy levels, burnout and a decline in health.

Contrary to what was expected, the study found that the other dimensions of recovery: relaxation, mastery and control do not act as mediators in the relation between communication overload from T1 to T3. Moreover, there were no direct paths between communication overload in T1 and mastery and control in T2 nor direct paths between relaxation, mastery and control in T2 and communication overload in T3. One possible explanation for this is that as the model mediated all four recovery strategies at the same time, they may have created effects over each other that reinforced psychological detachment which as a result would reduce communication overload. For instance, if a worker feels overloaded with communication that prevents him from experiencing relaxation to cope with this stressor means that automatically by not being able to

relax, he will not be able to detach from work. Therefore, we do not have a direct effect of these recovery strategies for the communication overload in T3, however there is a significant correlation among them which means that maybe there are effects between the four recovery strategies that were not studied.

Drawing on the Job-demand Resource model, the study predicted that the two dimensions of burnout (emotional exhaustion and cynicism) would moderate the relationship between communication overload in T1 and recovery strategies in T2. Regarding the moderator effects of exhaustion, the study found that when individuals have low levels of exhaustion, the relationship between communication overload T1 and psychological detachment and relaxation at T2 is not significant, meaning that communication overload is not preventing individuals from recovering. However, when the levels of exhaustion are high, communication overload T1, has a significant negative impact on both psychological detachment and relaxation strategies in T2.

Regarding the moderator effects of cynicism, contrary to what we expected, the cross-product terms between communication overload in T1 and cynicism in T1 on psychological detachment T2 was not significant. The present study found that when cynicism was perceived as low, the relationship between communication overload T1 and relaxation T2, was not significant. However, communication overload in T1 was associated with impaired levels of relaxation in T2 only when combined with high cynicism. Cynicism can be seen as a defensive strategy that individuals use to cope with stressful situations at work and life (Mirvis & Kanter, 1989). Additionally, cynicism has been found to be related with scarce job resources and lack of energy that result from overwhelming demands and thus this will have a negative impact in detachment at T2 if communication overload in T1 is high. This means that lower levels of relaxation in T2 occur when there is both high cynicism and high communication overload in T1.

Finally, in what concerns moderated mediation effects, the study found that the indirect effect between communication overload throughout time through psychological detachment was conditional only upon the levels of exhaustion, indicating that when individuals feel exhausted, they are more prone to be caught up in this vicious cycle of loss of resources, through impaired psychological detachment.

5.1. Practical implications

The relevance of this study applies to today's "always on" organizational cultures and work-home interference, in particularly to the current lockdown period where the majority of employees are working from home. Moreover, the confinement period will change the way we work, and when employees and managers go back to organizations many of the mal-adaptive behaviors adopted during the lockdown period will be carried on. From this study we can depict several implications for managers and organisational leaders.

Research shows that technostress is a lack of safety in culture. According to the results, it is crucial for organizations to minimize the negative effects of communication overload and burnout. Leaders should inspire and care about the people they serve and in order to accomplish this and ensure organizational safety, companies should apply positive technology in their company culture generating positive work experiences and hence contributing to the employee's recovery, quality of living and general well-being. Managers and organizational leaders should receive training regarding positive technology, the effects of technostress and recovery strategies.

Secondly companies need to establish new internal communication practices that promote a reduction in the amount of communication overload. For example, restricting the use of mobile devices outside office hours. Furthermore, managers can establish standardisation

processes to communicate for example setting a deadline to reply to communications which as a result alleviates the need to reply immediately.

Finally, managers and organizational leaders should avoid micromanaging and promote job autonomy in the organization. As seen in the literature, constant interruptions decrease productivity. Job autonomy decreases job demands as it avoids the need for constant meetings, and an excessive number of emails. This freedom, trust and flexibility in schedules not only increases motivation and happiness at work but it also allows employees to adjust their work schedules, which consequently may provide an opportunity for them to recover their lost resources and as a result increase their health and well-being (Thompson & Prottas, 2006).

Overall, in order to break this vicious cycle, organizations must strive to facilitate the recovery process by establishing positive HRM practices that contribute to low levels of communication overload and burnout in T1.

5.2. Limitations and future research

Although the present study provides a relevant contribution to the HRM literature, it has some limitations that should be acknowledged and addressed in future research.

First, although this was a longitudinal study that allowed us to test causal associations between the research variables with three questionnaires separated by a one-week difference, the time-lag between the collection of the data of each questionnaire (one-week) is not sufficient to verify the effect of recovery strategies that take a longer time such as mastery. As previously explained mastery occurs when the individual challenges himself to learn something new (Sonnentag & Fritz, 2007).

Moreover, the fact that this study was conducted during the lockdown period due to the pandemic crisis was an important strength of this research. However, it is also a limitation since it became too specific which may have influenced the results of the study for instance

employees started to work from home and had to adjust their life to be able to cope with a different way of living and working. Consequently, this may have influenced people to be more prone to technostress and burnout. In the future this study could be replicated in a different time period to test if there are any differences in the results.

Lastly considering the fact that this research was general and not specific to any industry, future studies should investigate specific industries and include other variables that may play a role in how technostress compromises recovery in a specific industry and were disregarded in the present work as the aim of this study was to be diversifiable. For instance, techno-complexity and techno-insecurity are some of the stressors that appear in the literature of technostress. Future research should explore other variables that can act as moderators, mediators and other consequences.

6. CONCLUSION

This research demonstrated that psychological detachment in T2 is compromised by the levels of communication overload in T1. This means that if an employee is already suffering from communication overload in T1, the employee will not be able to detach from work in T2 which as a consequence will lead to an increase in communication overload in T3. Additionally, individuals who are exhausted in T1 are more prone to be caught up in this vicious cycle of loss of resources. Therefore, in order to break this vicious cycle, organizations must strive to facilitate the recovery process by establishing positive HRM practices and look at new ways of working that contribute to low levels of communication overload and burnout in T1.

7. REFERENCES

Aiken, Leona S., and Stephen G. West. 1991. *Testing and Interpreting Interactions in Multiple Regression*. Sage Publications.

Ayyagari, R., V. Grover, and R. Purvis. 2011. "Techno Stress: Technological Antecedents and Implications." *MIS Quarterly: Management Information Systems* 35 (4): 831–858.

Bakker, Arnold B., and Evangelia Demerouti. 2007. "The Job Demands-Resources Model: State of the Art." *Journal of Managerial Psychology* 22 (3): 309–28.

Barber, Larissa K., and Alecia M. Santuzzi. 2015. "Please Respond ASAP: Workplace Telepressure and Employee Recovery." *Journal of Occupational Health Psychology* 20 (2): 172–89.

Binnewies, Carmen, Sabine Sonnentag, and Eva J. Mojza. 2009. "Daily Performance at Work: Feeling Recovered in the Morning as a Predictor of Day-Level Job Performance." *Journal of Organizational Behavior* 30 (1): 67–93.

Barley, Stephen R., Debra E. Meyerson, and Stine Grodal. 2011. "E-Mail as a Source and Symbol of Stress." *Organization Science* 22 (4): 887–906.

Brillhart, P. E. 2004. "Technostress in the Workplace: Managing Stress in the Electronic Workplace." *Journal of American Academy of Business, Cambridge* 5: 302–307.

Brod, Craig. 1984. *Techno Stress: The Human Cost of the Computer Revolution*. Harlow, England: Longman Higher Education.

Brooks, Stoney, Ronald J., and Esther Greenglass. 1995. "Does Personal Social Media Usage Burke." *" Human Relations* 48 (2): 187–202.

Burke, Ronald J., and Cary L. Cooper. 2008. *The Long Work Hours Culture: Causes, Consequences and Choices*. Bingley, UK: Emerald Group Pub.

Burke, Ronald J., and Esther Greenglass. 1995. "A Longitudinal Study of Psychological Burnout in Teachers." *" Human Relations* 48 (2): 187–202.

Croon, Einar M. de, Judith K. Sluiter, Roland W. B. Blonk, Jake P. J. Broersen, and Monique H. W. Frings-Dresen. 2004. “Stressful Work, Psychological Job Strain, and Turnover: A 2-Year Prospective Cohort Study of Truck Drivers.” *The Journal of Applied Psychology* 89 (3): 442–54.

Demerouti, Evangelia, Arnold B. Bakker, Friedhelm Nachreiner, and Wilmar B. Schaufeli. 2001. “The Job Demands-Resources Model of Burnout.” *The Journal of Applied Psychology* 86 (3): 499–512.

Derks, Daantje, Desiree van Duin, Maria Tims, and Arnold B. Bakker. 2015. “Smartphone Use and Work-Home Interference: The Moderating Role of Social Norms and Employee Work Engagement.” *Journal of Occupational and Organizational Psychology* 88 (1): 155–77.

Derks, Daantje, Heleen van Mierlo, and Elisabeth B. Schmitz. 2014. “A Diary Study on Work-Related Smartphone Use, Psychological Detachment and Exhaustion: Examining the Role of the Perceived Segmentation Norm.” *Journal of Occupational Health Psychology* 19 (1): 74–84.

Dettmers, Jan. 2017. “How Extended Work Availability Affects Well-Being: The Mediating Roles of Psychological Detachment and Work-Family-Conflict.” *Work and Stress* 31 (1): 24–41.

Geurts, Sabine A. E., and Sabine Sonnentag. 2006. “Recovery as an Explanatory Mechanism in the Relation between Acute Stress Reactions and Chronic Health Impairment.” *Scandinavian Journal of Work, Environment & Health* 32 (6): 482–92.

Haes, Steven De, Wim Van Grembergen, and Roger S. Debreceny. 2013. “COBIT 5 and Enterprise Governance of Information Technology: Building Blocks and Research Opportunities.” *” Journal of Information Systems* 27 (1): 307–24.

Hakanen, Jari J., Wilmar B. Schaufeli, and Kirsi Ahola. 2008. “The Job Demands-Resources Model: A Three-Year Cross-Lagged Study of Burnout, Depression, Commitment, and Work Engagement.” *Work and Stress* 22 (3): 224–41.

Hayes, A. F. 2012. “An analytical primer and computational tool for observed variable moderation, mediation, and conditional process modeling.” Retrieved from http:// www.afhayes.com/public/process2012.pdf

Hartig, Terry, Gary W. Evans, Larry D. Jamner, Deborah S. Davis, and Tommy Gärling. 2003. “Tracking Restoration in Natural and Urban Field Settings.” *Journal of Environmental Psychology* 23 (2): 109–23.

Hobfoll, Stevan E. 1989. “Conservation of Resources: A New Attempt at Conceptualizing Stress.” *The American Psychologist* 44 (3): 513–24.

Hobfoll, Stevan E., and Roy S. Lilly. “Resource Conservation as a Strategy for Community Psychology.” *Journal of Community Psychology* 21, no. 2 (1993): 128–48.

Hockey, G. Robert J. 1997. “Compensatory Control in the Regulation of Human Performance under Stress and High Workload: A Cognitive-Energetical Framework.” *” Biological Psychology* 45 (1–3).

Jackson, T. W., R. Dawson, and D. Wilson. 1999. “Improving the Communications Process: The Costs and Effectiveness of Email Compared with Traditional Media.” In , 167–178. Crete: Heraklion.

Karr-Wisniewski, Pamela, and Ying Lu. 2010. “When More Is Too Much: Operationalizing Technology Overload and Exploring Its Impact on Knowledge Worker Productivity.” *Computers in Human Behavior* 26 (5): 1061–72.

Lastovkova, Andrea, Melanie Carder, Hans Martin Rasmussen, Lars Sjoberg, Gerda J. de Groene, Riitta Sauni, Jiri Vevoda, et al. 2018. “Burnout Syndrome as an Occupational

Disease in the European Union: An Exploratory Study." *Industrial Health* 56 (2): 160–65.

Mäkikangas, Anne, and Ulla Kinnunen. 2016. "The Person-Oriented Approach to Burnout: A Systematic Review." *Burnout Research* 3 (1): 11–23.

Maslach, Christina, Wilmar B. Schaufeli, and Michael P. Leiter. 2001. "Job Burnout." *Annual Review of Psychology* 52 (1): 397–422.

McFarlane, Daniel C., and Kara A. Latorella. 2002. "The Scope and Importance of Human Interruption in Human-Computer Interaction Design." *Human-Computer Interaction* 17 (1): 1–61.

Meijman, T. F., and G. Mulder. 1998. "Psychological Aspects of Workload." In , edited by P. J. D. Drenth and H. Thierry, 2:5–33. Hove: Psychology Press.

Neff, Angela, Sabine Sonnentag, Cornelia Niessen, and Dana Unger. 2012. "What's Mine Is Yours: The Crossover of Day-Specific Self-Esteem." *Journal of Vocational Behavior* 81 (3): 385–94.

Park, Youngah, Charlotte Fritz, and Steve M. Jex. 2011. "Relationships between Work-Home Segmentation and Psychological Detachment from Work: The Role of Communication Technology Use at Home." *Journal of Occupational Health Psychology* 16 (4): 457–67.

Pelletier, Cori L. 2004. "The Effect of Music on Decreasing Arousal Due to Stress: A Meta-Analysis." *Journal of Music Therapy* 41 (3): 192–214.

Preacher, K. J., D. D. Rucker, and A. F. Hayes. 2007. "Assessing Moderated Mediation Hypotheses: Theory, Method, and Prescriptions." *" Multivariate Behavioral Research* 42: 185–227.

Richardson, Katherine M., and Hannah R. Rothstein. 2008. “Effects of Occupational Stress Management Intervention Programs: A Meta-Analysis.” *Journal of Occupational Health Psychology* 13 (1): 69–93.

Salanova, Marisa, Mario Del Líbano, Susana Llorens, and Wilmar B. Schaufeli. 2014. “Engaged, Workaholic, Burned-out or Just 9-to-5? Toward a Typology of Employee Well-Being: Employee Well-Being and Work Investment.” *Stress and Health: Journal of the International Society for the Investigation of Stress* 30 (1): 71–81.

Salminen, Stela, Elena Andreou, Juha Holma, Mika Pekkonen, and Anne Mäkikangas. 2017. “Narratives of Burnout and Recovery from an Agency Perspective: A Two-Year Longitudinal Study.” *Burnout Research* 7: 1–9.

Schaufeli, W. B., and D. Enzmann. 1998. *The Burnout Companion to Study and Research: A Critical Analysis*. London: Taylor & Francis.

Schaufeli, Wilmar B., Dirk Enzmann, and Nöelle Girault. 2017. “Measurement of Burnout: A Review.” In *Professional Burnout*, 199–215. Routledge.

Shanafelt, Tait D., Jeff A. Sloan, and Thomas M. Habermann. 2003. “The Well-Being of Physicians.” *The American Journal of Medicine* 114 (6): 513–19.

Siltaloppi, Marjo, Ulla Kinnunen, and Taru Feldt. 2009. “Recovery Experiences as Moderators between Psychosocial Work Characteristics and Occupational Well-Being.” *Work and Stress* 23 (4): 330–48.

Sonnentag, S. 2001. “Work, Recovery Activities, and Individual Well-Being: A Diary Study.” *Journal of Occupational Health Psychology* 6 (3): 196–210.

Sonnentag, Sabine. 2003. “Recovery, Work Engagement, and Proactive Behavior: A New Look at the Interface between Nonwork and Work.” *The Journal of Applied Psychology* 88 (3): 518–28.

Sonnentag, Sabine, and Ute-Vera Bayer. 2005. "Switching off Mentally: Predictors and Consequences of Psychological Detachment from Work during off-Job Time." *Journal of Occupational Health Psychology* 10 (4): 393–414.

Sonnentag, Sabine, and Charlotte Fritz. 2007. "The Recovery Experience Questionnaire: Development and Validation of a Measure for Assessing Recuperation and Unwinding from Work." *Journal of Occupational Health Psychology* 12 (3): 204–21.

Sonnentag, Sabine, and Undine Kruel. 2020. "Psychological Detachment from Work during Off-Job Time: The Role of Job Stressors, Job Involvement, and Recovery-Related Self-Efficacy." In *Work and Rest: A Topic for Work and Organizational Psychology*, 197–217. Psychology Press.

Sonnentag, S., and F. R. H. Zijlstra. 2006. "Job Characteristics and Off-Job Time Activities as Predictors of Need for Recovery, Well-Being and Fatigue." *Journal of Applied Psychology* 91: 330–350.

Sonnentag, Sabine, Laura Venz, and Anne Casper. 2017. "Advances in Recovery Research: What Have We Learned? What Should Be Done Next?" *Journal of Occupational Health Psychology* 22 (3): 365–80.

"How to Make Connections in Remote Meetings - Microsoft 365 Blog." 2020. Microsoft.Com. April 9,2020. https://www.microsoft.com/en-us/microsoft-365/blog/2020/04/09/remote-work-trend-report-meetings/.

Tams, Stefan, Manju Ahuja, Jason Thatcher, and Varun Grover. 2020. "Worker Stress in the Age of Mobile Technology: The Combined Effects of Perceived Interruption Overload and Worker Control." *Journal of Strategic Information Systems* 29 (1): 101595.

Ragu-Nathan, T. S., Monideepa Tarafdar, Bhanu S. Ragu-Nathan, and Qiang Tu. 2008. "The Consequences of Technostress for End Users in Organizations: Conceptual

Development and Empirical Validation." *Information Systems Research : ISR* 19 (4): 417–33.

Tarafdar, Monideepa, Qiang Tu, and T. S. Ragu-Nathan. 2010. "Impact of Technostress on End-User Satisfaction and Performance." *Journal of Management Information Systems : JMIS* 27 (3): 303–34.

Taris, T. W., D. G. J. Beckers, A. Dahlgren, S. A. E. Geurts, and P. Tucker. 2007. "Overtime Work and Well-Being: Prevalence, Conceptualization and Effects of Working Overtime." In , edited by S. McIntyre and J. Houdmont, 2:21–40. Maia, Portugal: ISMAI.

Klink JJ, Blonk Rw, Schene Ah, and Dijk FJ. 2001. "The Benefits of Interventions for Work-Related Stress." *Am J Public Health* 91: 270–276.

Hooff, M. L. M., S. A. E. Geurts, M. A. J. Kompier, and T. W. Taris. 2006. "Work-Home Interference: How Does It Manifest Itself from Day to Day?" *Work & Stress* 20 (2): 145–162.

Weil, M., and L. Rosen. 1997. *Technostress: Coping with Technology @work @home @play*. New York: Wiley.

Zijlstra, F. R. H. 1996. "Effort as Energy Regulation." In , edited by W. Battmann and S. Dutke, 219–235. Berlin, Germany: Pabst Science Publishers.

8. APPENDIX

Table 2. Regression results for mediation and mediated moderation (exhaustion)

DV: Recovery strategy T2	**Detachment: R2 = .16 p<.001**				**Relaxation: R2 = .15 *p* <.01**				**Mastery: R2 = .06 *p* =.97**				**Control: R2 = .08 *p* =.11**			
	B	*SE*	*t*	*p*	B	*SE*	*t*	*p*	B	*SE*	*t*	*p*	B	*SE*	*t*	*p*
Constant	3.29	.28	11.78	<.001	3.80	.24	16.05	<.001	3.79	.24	15.82	<.001	4.21	.22	19.23	<.001
Comunication Overload T1	-.25	.10	-2.40	<.05	-.10	.09	-1.13	<.05	.08	.09	.91	.36	-.04	.08	-.45	.66
Exhaustion T1	.00	.06	-.03	.97	-.12	.05	-2.42	<.05	-.13	.05	-2.50	<.01	-.10	.05	-2.26	<.05
Comunication Overload T1 X Exhaustion T1	-.19	.07	-2.97	<.001	-.14	.06	-2.54	<.01	.00	.06	-.05	.96	-.01	.05	.11	.91
	Partial effects of control variables				Partial effects of control variables				Partial effects of control variables				Partial effects of control variables			
Gender	-.05	.17	-.30	.76	.02	.15	.17	.87	.00	.15	-.01	.99	-.22	.14	-1.60	.11
Tenure	-.07	.06	-1.10	.27	-.01	.05	-.14	.89	.00	.05	.05	.95	-.01	.05	-.15	.88

DV: Comunication Overload T3 R2 = .48 *p* <.001	B	*SE*	*t*	*p*
Constant	3.29	.49	6.67	<.001
Comunication Overload T1	.56	.07	7.96	<.001
Detachment T2	-.22	.08	-2.89	<.001
Relaxation T2	.08	.10	.84	.41
Mastery T2	.07	.09	.87	.39
Control T2	.08	.10	.88	.38
	Partial effects of control variables			
Gender	-.09	.12	-.71	.48
Tenure	-.07	.04	-1.61	.11

	Effects (1)	*SE*	LLCI	ULCI
Direct Effect of CommunicationOverload T1 on CommunicationOverload T3	.56	.07	.42	.70
	Effects (1)	Boot *SE*	Boot LLCI	BootULCI
Indirect Effect of CommunicationOverload T1 through detachment T2	.06	.03	.01	.13
Conditional indirect effect = $M \pm 1SD$				
- 1 *SD* (-1.53)	-.01	.03	-.08	.05
M (0.00)	.05	.03	.00	.11
+ 1 *SD* (+1.53)	.12	.05	.04	.22

Note. N=107. (1)- Unstandardized Effect. Bootstrap sample size = 10.000. LL = Lower limit; CI = confidence interval; UL = upper limit.

Table 3. Regression results for mediation and mediated moderation (cynicism)

DV: Recovery strategy T2	**Detachment: R2 = .12 *p* <.05**				**Relaxation: R2 = .11 *p* <.01**				**Mastery: R2 = .03 *p* =.63**				**Control: R2 = .08 *p* =.11**			
	B	*SE*	*t*	*p*	B	*SE*	*t*	*p*	B	*SE*	*t*	*p*	B	*SE*	*t*	*p*
Constant	3.18	.28	11.35	<.001	3.63	.24	15.31	<.001	3.69	.24	15.48	<.001	4.13	.21	19.26	<.001
Comunication Overload T1	-.33	.10	-3.20	<.001	-.14	.09	-1.65	<.001	.04	.09	.40	.69	-.05	.08	-.60	.55
Cynicism T1	.11	.06	1.85	.07	-.08	.05	-1.70	.09	-.07	.05	-1.35	.18	-.10	.04	-2.20	<.05
Comunication Overload T1 X Cynicism T1	-.05	.06	-.83	.41	-.11	.05	-2.11	<.05	-.06	.05	-1.23	.22	-.03	.05	-.68	.50
	Partial effects of control variables				Partial effects of control variables				Partial effects of control variables				Partial effects of control variables			
Gender	-.06	.18	-.32	.75	.16	.15	1.05	.30	.09	.15	.62	.54	-.12	.14	-.91	.36
Tenure	-.05	.06	-.72	.47	-.02	.05	-.41	.68	.00	.05	.06	.96	-.02	.05	-.48	.63

DV: Comunication Overload T3 R2 = .48 *p* <.001	B	*SE*	*t*	*p*
Constant	3.29	.49	6.67	<.001
Comunication Overload T1	.56	.07	7.96	<.001
Detachment T2	-.22	.08	-2.89	<.001
Relaxation T2	.08	.10	.84	.41
Mastery T2	.07	.09	.87	.39
Control T2	.08	.10	.88	.38
	Partial effects of control variables			
Gender	-.09	.12	-.71	.48
Tenure	-.07	.04	-1.61	.11

	Effects (1)	*SE*	LLCI	ULCI
Direct Effect of CommunicationOverload T1 on CommunicationOverload T3	.56	.07	.42	.70
	Effects (1)	Boot *SE*	Boot LLCI	BootULCI
Indirect Effect of CommunicationOverload T1 through detachment T2	.06	.03	.01	.12

Conditional indirect effect = *M* ± 1*SD: Not supported*

Note. N=107. (1)- Unstandardized Effect. Bootstrap sample size = 10.000. LL = Lower limit; CI = confidence interval; UL = upper limit.