

Work-family conflict during the Covid-19 pandemic: teleworking of administrative and technical staff in healthcare. An Italian study

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ABSTRACT

Background: Remote working (more appropriately, mandatory work from home) during the Covid-19 healthcare emergency has increased significantly. Amidst many critical issues, work-family conflict (WFC) remains a central topic, due to the hardships in separating different life domains, the pervasiveness of technology, and decreased opportunities for recovery, all considering new, emerging job demands. Although many studies have involved healthcare workers, less attention has been paid to technical-administrative staff (TA); moreover, previous studies about the impact of remote working on WFC have provided mixed results. **Objectives:** The study aims at examining the relationships between WFC and cognitive demands, off-work hours technology assisted job demands (off-TAJD) and recovery, in the TA of a hospital in northwest Italy. **Methods:** A sample of 211 individuals (response rate of 58%), in line with the population, filled in an online self-report questionnaire in the second half of April 2020. **Results:** Multiple regression analysis showed a positive relationship between WFC and perceived ICT stress, off-TAJD and cognitive demands, and a negative relationship with recovery. **Conclusions:** The results confirm the role of cognitive demands, technology overload and invasiveness, as potential predictors of WFC. The results also indicate the mitigating role of recovery, even in the face of a prolonged and forced experience of remote work. The study emphasises the need for transparent policies, based on trust, autonomy and right to disconnect, and the centrality of training, especially for supervisors, on topics such as evaluation of results, proper recovery management and correct use of technology.

INTRODUCTION

Many scholars wonder whether the Covid-19 pandemic, accompanied by its array of containment measures, will change how we conceptualise work and contribute to the introduction of initiatives in favour of work-life balance and well-being (1, 2), in line with the past, when previous epidemics aroused

changes in labour policies. Our research fits into this scenario.

Among the measures adopted to curb the spread of Covid-19, the massive use of remote work has been, compared to the past, a crucial, highly innovative element. Albeit the characteristics of remote working during the lockdown are decidedly different from the common and normative definitions -

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at least in Italy - of agile work, or smart working, many have seen the massive mandatory adoption of home working, imposed by the emergency, as an opportunity to overcome the reticence commonly associated with remote working, such as the suitability for certain occupations or specific job tasks; concerns about job/performance evaluation; effective management of physically distant employees, which requires remote leadership skills; problematic communications; professional isolation (1, 2).

In reiterating the importance of studying mandatory work from home, some scholars paid attention to the consequences of teleworking on mental well-being (e.g., 3). Beyond the sanitary crisis, issues related to quality of life and mental well-being of remote workers piqued the interest of many scholars. In this regard, the recent reviews by Tavares (4) and Vayre (5) outlined that telework is positively but also negatively related to worker health: musculoskeletal problems, isolation, depression symptoms, stress, overwork can be associated with remote work. Some scholars specifically focus on work-family conflict as a major topic (6); indeed, many emergent issues highlighted the possible conflict between work, family and the rest of life, namely: loss of boundaries between work and life; the increased use of technology, both for work and every other circumstances; the impossibility of leaving the household, while schools and other support services are closed, as well as a weaker possibility to recover after work, due to the impossibility to take part in leisure activities outside home (1, 2). The interest in work-family issues is also related to the impact on psychological well-being of workers; indeed, some studies showed that work-to-family conflict can partially mediate the relation between certain demands and resources and perceived stress (7) as well as burnout (8).

Many studies investigated the conditions of healthcare professionals, considering psychophysical well-being and occupational stress (e.g., 9); on the contrary fewer are contributions on administrative staff (e.g., 10). Following the need for further research on these specific employment situations (1, 2), this study chooses to focus on technical-administrative personnel in healthcare, in many instances at their first remote working experience.

The status of remote working in Italy before and during Covid-19

Before the emergency, as per data from Observatory of smart working of the Milan Polytechnic¹, 570 thousand people worked from home; a small number, considering the support provided by many regulations² and the Government action to promote remote working in public administrations (PA).

As of 13/3/2020, just over a week after the Government's decree which established the first partial lockdown, the Ministry of Labour reported that the number of remote workers had doubled; at the end of April, this figure stood at 1,827,792, or 8% of the workforce. The surge in "emergency remote workers" progressed as a reaction to the Decree of the President of the Council of Ministers (DPCM) promulgated on 11/3/2020, and in particular, to the directives of the Ministry of Public Administration, which waived the mandatory experimentation period for remote working in favour of an immediate extension to almost all personnel.³ In response, as of March 27, 68% of PA staff was working remotely, albeit with significant variability across regions and a smaller percentage of devices supplied to workers in southern regions (data from the Ministry of Public Administration).

However, remote working during emergency has been a hybrid between *telelavoro* (home working the whole week with time-based job evaluations/verification) and *lavoro agile* (a more flexible, mobile, objectives-driven work arrangement, often carried out with private devices) with little or no dedicated training. This discordant context is even more criti-

1. Observatoire of Smart Working. A growing number of Italian agile workers: 570 thousand (+20%) workers more satisfied than other. From: <https://www.osservatori.net/it/ricerche/comunicati-stampa/cresce-il-numero-degli-smart-worker-italiani-570mila-plus20-lavoratori-piu-soddisfatti-degli-altri>

2. The first telecommuting regulation for PA was Law 191/1998, followed by Presidential Decree 70/1999. Subsequently, a precursor of agile work, named "mobile telework" was cited in the 2000 agreement between trade unions and the negotiation representatives of PA. The 2004 Inter-confederation agreement and Law 124/2015, on the other hand, required all PA to adopt organisational measures to prepare themselves for agile work.

3. For further reading see: <https://www.forumpa.it/riforma-pa/smart-working/smart-working-cose-come-funziona-la-normativa-e-i-vantaggi-per-le-pa/>

cal if we consider Italy's technological underdevelopment: in the Digital Economy and Society index (DESI) Italy ranks last in the Human Capital dimension, which reports users' digital skills, and fourth to last in general.

The ever ongoing development of technology has reified, for a growing number of people, the idea that remote working can yield multiple positive outcomes (11), such as: improving quality of work and reducing stress through greater concentration and control over time and job tasks (12); promoting job satisfaction and well-being, especially when granted autonomy over family life aspects (13) and when social support is high (14) reducing daily commutes and favouring work-life balance; promoting inclusion and diversity management, e.g., through work arrangements suitable for people with disabilities. However, there could also be negative outcomes on remuneration, learning and career opportunities, although these aspects are more associated with organisational culture or specific job sectors. Finally, given that remote working is usually considered a woman's prerogative in order to better reconcile work and care tasks, traditional gender roles may be reinforced, thus worsening women's career opportunities and pay (11).

Demands, ICT stress and recovery: the work-family interface in emergency remote working

Studies about work-family interface take into account WFC in order to comprehend its antecedents and consequences (6). This construct stems from role theories (14) and Goode's role strain (15), according to which each role requires an "investment" in time and energy; considering the limited individual resources, managing multiple roles could generate inter-role conflict, which implies incompatibility between work and family demands (16). This conflict can be defined as bidirectional (work-family interference; family-work interference); asymmetrical (high levels of work-family conflict and low of family-work conflict and vice versa) or mutual (high or low levels of conflict in both directions) (6). According to literature, the contributing variables to WFC are mainly job demands (workload, cognitive load, emotional labour, ...) while the opposite is true for job resources; specifically, organisational support is considered

one of the most effective factors in reducing WFC (e.g., 6, 17). In the healthcare sector, WFC is predominantly investigated in nursing staff, whereas few studies exist on technical-administrative staff (18). In nursing staff, as well as other occupational groups, WFC is associated with turnover intentions (19) and reduced job satisfaction, absenteeism and voluntary resignations (e.g., 20). More broadly, the study of WFC is of critical importance, as multiple negative outcomes have been found on mental and physical well-being, job and life satisfaction (21) and thus is also considered in work-related stress assessments.

During lockdown and the subsequent prolonged period of remote working, as schools and child care services are closed, people are generally experiencing a surge in both job and family demands (2). However, studies prior to the emergency have shown that, while one of the goals of remote working is work-life balance, its expected positive effects have not been confirmed, aside from reducing the commuting burden (13, 22). WFC seems to be largely unaffected by this work arrangement, other than a slight reduction after a long period of remote work (implying a long learning process), which, however, often results in an increased family-work interference, an element that could induce a deterioration in concentration, thus conflicting with the performance-enhancing rationale which remote working sits upon (e.g., 11). Furthermore, as the number of telecommuting days per week increases, work-family interferences decreases but the opposite is true for family-work conflict (23), while due to professional isolation, satisfaction also decreases; however, this negative effect is reduced if high supervisor support is present (e.g., 13).

The main explanations of why remote working does not help reduce work-life conflict relate to the loss of boundaries between work and family domains (24) and the increase of personal family responsibility (25), thus exacerbating the conflict between these roles; both are aspects that were taken to their extreme during the lockdown. Our study, considering the nature of work of healthcare TA staff, takes into account cognitive demands such as information processing, decision-making and problem solving, that, while not necessarily harmful, (26) could lead

to an increase in stress if they cause a large effort followed by inadequate recovery (27).

Moving forward, the use of technology is another crucial aspect for remote workers: albeit information and communication technologies accelerated and facilitated many work-related processes, while also granting an expanding database of readily available information, they have also exposed workers to specific work-related stress risks (28, 29); this detrimental process was also found in remote workers during the Covid-19 outbreak (30, 31).

The perception of an employee that their organisation is asking them to perform additional work tasks outside the regular working hours, through the use of technology, can be considered a specific job demand, defined as off-work hours technology assisted job demands (28). Previous studies have highlighted a relationship between this request, WFC and exhaustion, through the mediation of workaholism (32) and recovery (30). To the best of our knowledge, these variables are sparsely documented in healthcare TA staff. First, we hypothesise a positive relationship between job demands and WFC.

Hypothesis 1. *a) Cognitive demands and b) off-work hours technology assisted job demands (off-TAJD) have a positive relationship with WFC.*

Alongside job demands we consider the perceived stress of using technologies to maintain contact with relatives, friends, co-workers, and supervisors. Social distancing during the lockdown likely intensified the use of ICT for contacts, causing a technological pervasiveness that could be perceived as stressful. For these reasons, this research has taken into account a specific facet of technostress, namely information overload and invasiveness (e.g., 33). Recent studies on the consequences of technostress reported turnover intentions and, especially through the increased workload and flexibility that technology allows, an increased perception of WFC (31). Given the technological escalation during quarantine and the negative effect of technostress as reported in the literature, we therefore hypothesise a positive relationship between perceived stress related to the use of ICT to stay connected with others and WFC.

Hypothesis 2. *The perception of stress related to ICT use to stay connected with others has a positive relationship with WFC.*

As mentioned earlier, inadequate recovery can, in the long term, cause major health issues (27). The recovery process can be illustrated by the effort-recovery model (27) and conservation of resources theory (34). The effort-recovery model (27) assumes that physiological arousal and fatigue are natural consequences of expending energy at work. In order to achieve an effective recovery process, functional systems activated during work should be left unstressed, in order to allow them to return to pre-stress levels. Moreover, the conservation of resources theory (34) states that individuals attempt to defend and maintain their resources to protect themselves from stress. The recovery process is vital to restore internal resources, such as energy or self-efficacy, which have been depleted during the workday. Sonnentag and Fritz (35) identified four recovery experiences: 1) psychological and cognitive detachment from work, 2) relaxation, as state of calm and low arousal, 3) mastery, which includes activities, other than work, related to resources enhancement, and 4) control over one's free time in general. Together with the positive outcomes on well-being (e.g., 36) and performance (e.g., 37), recovery can moderate the relationship between WFC, psychological tension and life satisfaction (38). Third, we hypothesise a negative relationship between recovery and WFC.

Hypothesis 3. *Recovery experiences have a negative relationship with WFC.*

METHODS

Procedure and participants

This cross-sectional study was carried out in a local health company in the northwest of Italy, between 15 and 30 April 2020, a month and a half after the beginning of mandatory working from home. In that period, the number of people working remotely was 364 (71% were women; predomi-

nantly with an administrative profile and 65% aged between 40 and 50) within the company. For all of them this was the first telework experience in the company. To support its implementation, both the management and the staff have been invited to attend a six-hour mandatory course with informational, normative and technical content on psychosocial risks. Moreover, all teleworkers received from the company the technological tools to work from home; a help desk dedicated to technological issues and a specific procedure to protect workers' psycho-physical health have been implemented. Additionally, a web community, where teleworkers could share their experiences and remain in contact, has been created. Finally, a personal record indicating activities and objectives, subject to verification of direct supervisors, was prepared for each employee.

The study was conducted in accordance with the Helsinki Declaration: it did not involve medical treatment or other procedures that could undermine participants' psychological or social comfort. The Bioethical Committee of the University of Turin approved the study (document n. 150561, 3 April 2020). The voluntary and unpaid participation, data treatment information and the anonymity were emphasised.

The link to the questionnaire was sent to all administrative and technical staff who were working from home. The participants filled in the questionnaire on the Google Moodle Platform (Google Drive of the University of Turin). A synthesis of demographic and socio-professional characteristics is presented in Table 1.

Measures

WFC was measured using the Italian adaptation of Netemeyer et al.'s scale (6, 39), consisting of 5 items on a frequency scale from 1 = "never" to 5 = "always". An item to measure the conflict in the family to work direction was added to this scale. An example item is "Things you want to do at home do not get done because of the demands your job puts on you."

Cognitive Demands was detached using 4 items (40), already used in other Italian studies (e.g., 32), applying a frequency Likert scale from 1 = "never" to 5 = "always". An example item is "My work demands a lot of concentration".

Off-work hours technology assisted supplemental work were measured by a scale (28) consisting of 4 items on a scale ranging from 1 = "never" to 5 = "always". An example item is "How often does your organization require you to answer phone calls and emails during off-hours?"

Recovery was measured using 12 items of the short scale by Sonnentag and Fritz (35), previously used in other Italian studies (e.g., 41). A 5-point Likert scale, from 1 = "totally disagree" to 5 = "totally agree", has been applied. Four dimensions define the scale: psychological detachment ("I forget about work"), relaxation ("I take time for leisure"), mastery ("I do things that challenge me") and control ("I decide my own schedule").

Perceived stress related to the use of ICT to stay connected with others was detached using 4 items ad hoc, based on Tams et al.'s study (42), applying a 5-point Likert scale ranging from 1 = "totally

Table 1. Demographic and socio-professional characteristics (no.=211).

Gender	74% women
With children	80%
Taking care of children/parents	80%
Study title	52% Bachelor's or Master's degree 36% high school diploma
Working hours	82% full time
Position	60% employees 40% managers or directors
Age, Mean (SD)	53.28 (6.66)
Seniority, Mean (SD)	25.48 (9.25)

disagree” to 5 = “totally agree”. Items asked participants to reflect about how stressing it is to keep in touch via technologies with colleagues, managers, friends and relatives. An example item is “I find it stressful to use technologies to keep in touch with my colleagues”.

Data analysis

Data was analysed by the IBM SPSS 26 statistics software. For each scale descriptive data analysis was performed and Cronbach’s alpha coefficient was calculated. Furthermore, for the scale of perceived stress related to the use of ICT to stay connected with others an EFA was performed (extraction method: principal components). All 4 items have saturations on a unique latent factor, with factor loadings varying from 0.83 to 0.87, with an explained variance equal to 72%. An analysis of variance was performed to compare the means of some variables considering certain grouping variables. Finally, Pearson correlations were performed to detect relationships between variables and in order to test regression effects on WFC, a stepwise multiple regression analysis was tested.

RESULTS

Table 2 shows descriptive analyses, *alpha* values (ranging from 0.85 to 0.92) and the correlations. Out of the 364 remote workers, 211 completed the questionnaire (response rate of 58%); among them, only one person had already benefited from agile work initiatives. Despite the course being planned for all, 54% declared not to have received a specific training and only 19% evaluated it as appropriate. During the period of remote work, 42% participated in virtual meetings. Overall, people evaluated positively the agile work experience in emergency, with a score of 8.51 on a scale ranging from 1 to 10 (*SD*=1.48).

As regards the technologies, on a scale ranging from 1 (at all) to 5 (completely), people evaluated the internet connection adequate (*M*=4.22; *SD*=0.92). The worry about the emergency was high enough (*M*=4.02; *SD*=0.85; Likert scale 1-5). Descriptive data highlights a relatively low level of WFC in the whole sample. The cognitive demands and work interference via technologies appear limited, as well as the perceived stress related to the use of ICT to stay connected with others. Coherently to these findings, recovery levels are also fairly high.

Table 2. Means, standard deviations, Cronbach’s alphas and correlations among the study variables in the whole sample.

	1	2	3	4	5	6	7	8	9	10
1. WFC	1									
2. Gender (1=f)	-0.01	1								
3. Age	-0.02	-0.20**	1							
4. Care tasks (1=yes)	0.20**	0.12	-0.18**	1						
5. Training (1=yes)	0.01	-0.04	-0.01	-0.15*	1					
6. Quality of Internet connection	-0.17*	0.15*	-0.01	0.04	-0.01	1				
7. Cognitive demands	0.18**	0.17*	-0.05	0.04	0.05	0.11	1			
8. Off-TAJD	0.25**	-0.14*	0.02	0.10	0.01	-0.08	0.09	1		
9. Perceived stress related to remain connected using ICT	0.26**	-0.01	0.02	0.01	-0.01	-0.11	0.07	0.06	1	
10. Recovery	-0.39**	0.04	0.21**	-0.19**	0.03	0.12	-0.07	-0.18	-0.11	1
M	2.01	-	53.28	-	-	4.23	3.84	1.77	1.80	3.54
SD	0.74	-	6.66	-	-	0.92	0.77	0.84	0.94	0.81
Alpha	0.86	-	-	-	-	-	0.85	0.89	0.86	0.92

Note. **p*<0.05; ** *p*<0.01

As shown by table 3, analysis of variance revealed that WFC did not vary according to gender but in relation to the presence of care tasks: those who declared to take care of children or parents showed higher levels of WFC ($M=2.08$; $SD=0.74$) than the counterpart ($M=1.71$; $SD=0.66$; $F=8.71$, $p=0.004$). Furthermore, in line with expectations, recovery is lower among participants with care tasks ($M=3.47$; $SD=0.82$) than among those without them ($M=3.87$; $SD=0.73$; $F=8.10$, $p=0.005$).

Cognitive demands are higher in the female subsample ($M=3.91$; $SD=0.77$) than in the male subsample ($M=3.62$; $SD=0.72$; $F=6.02$, $p=0.010$) whilst off-TAJD are higher in the male subsample ($M=1.97$; $SD=0.89$) than in the female subsample ($M=1.70$; $SD=0.82$; $F=4.13$, $p=0.040$). Lastly, off-TAJD are higher among participants who cover positions of responsibility ($M=2.03$; $SD=0.97$ vs $M=1.61$; $SD=0.70$; $F=12.87$, $p<0.001$).

Correlation analysis, preliminary to multiple regression, highlights various statistically significant relationships, as shown in Table 2. Gender does not present any relevant relationship with the variables, with the exception of age (males are older on average) and off-TAJD. Also having participated in the training does not correlate with the other variables, except for a negative correlation with care tasks (people involved in care tasks had less opportunity to follow the training). Results from multiple regression, presented in Table 4, highlight that perceived stress related to the use of ICT to stay connected with others ($\beta=0.20$, $p=0.002$), off-TAJD ($\beta=0.15$, $p=0.015$) and cognitive demands ($\beta=0.14$, $p=0.020$) have a positive relation with WFC, whilst recovery has a negative relationship with WCF ($\beta=-0.29$, $p<0.001$). Finally, care tasks show a positive relationship with WFC ($\beta=0.13$, $p<0.039$) and the quality of the connection a negative one ($\beta=-0.12$, $p<0.047$). The model explains 25% of variance.

Table 3. Analysis of variance to compare variables according to care tasks, gender and organizational position.

<i>Care tasks</i>	Yes (no.=168)		Non (no.=41)	
	M/SD	M/SD	F	<i>p</i>
Age	52.70/6.54	55.76/6.73	7.14	0.008
WFC	2.08/0.74	1.71/0.66	8.71	0.004
Cognitive Demands	3.85/0.79	3.78/0.71	0.33	0.569
Off-TAJD	1.81/0.88	1.59/0.65	2.23	0.137
Perceived stress related to stay connected using ICT	1.80/0.96	1.79/0.91	0.015	0.904
Recovery	3.47/0.82	3.87/0.73	8.10	0.005
<i>Gender</i>	Women (no.=157)	Men (no.=54)		
Age	52.51/6.71	55.51/6.03	8.45	0.004
WFC	2.01/0.72	2.03/0.78	0.37	0.848
Cognitive Demands	3.91/0.77	3.62/0.72	6.02	0.014
Off-TAJD	1.70/0.82	1.97/0.89	4.13	0.043
Perceived stress related to the use of ICT to stay connected with others	1.79/0.97	1.81/0.89	0.35	0.853
Recovery	3.54/0.82	3.48/0.78	0.31	0.578
Position of high responsibility	Yes (no.=79)	Non (no.=126)		
Age	54.08/6.91	52.95/6.43	1.40	0.238
WFC	2.13/0.69	1.94/0.77	3.14	0.078
Cognitive Demands	3.85/0.63	3.82/0.87	0.05	0.831
Off-TAJD	2.03/0.97	1.61/0.70	12.87	0.000
Perceived stress related to the use of ICT to stay connected with others	1.85/0.97	1.78/0.93	0.30	0.583
Recovery	3.43/0.73	3.61/0.87	2.31	0.130

Table 4. Stepwise multiple regression with WFC as dependent variable (N=211).

Dependent Variable=WFC		β	t	p	$R^2 - \Delta R^2$
<i>Step1</i>	(Constant)		9.23	0.000	
	Care tasks (1=yes)	0.21	3.11	0.002	$R^2 = .06$
	Quality of the Internet connection	-0.18	-2.65	0.009	
<i>Step2</i>	(Constant)		4.19	0.000	
	Care tasks (1=yes)	0.18	2.79	0.006	$R^2 = 0.13$
	Quality of the Internet connection	-0.18	-2.76	0.006	$\Delta R^2 = 0.08$
	Cognitive demands	0.18	2.72	0.007	$p < 0.001$
	Off-TAJD	0.20	3.04	0.003	
<i>Step3</i>	(Constant)		3.21	0.002	
	Care tasks (1=yes)	0.18	2.85	0.005	$R^2 = 0.18$
	Quality of the Internet connection	-0.16	-2.42	0.016	$\Delta R^2 = 0.05$
	Cognitive demands	0.16	2.50	0.013	$p = 0.001$
	Off-TAJD	0.19	2.96	0.003	
	Perceived stress related to the use of ICT	0.22	3.50	0.001	
<i>Step4</i>	(Constant)		5.43	0.000	
	Care tasks (1=yes)	0.13	2.07	0.039	
	Quality of the Internet connection	-0.12	-1.99	0.047	$R^2 = 0.25$
	Cognitive demands	0.14	2.35	0.020	$\Delta R^2 = 0.08$
	Off- TAJD	0.15	2.47	0.015	$p < 0.001$
	Perceived stress related to the use of ICT	0.20	3.20	0.002	
	Recovery	-0.29	-4.63	0.000	

Note: B = the standardized regression coefficients; t = t-test; p = statistical significance; R^2 = coefficient of determination; ΔR^2 = delta R^2

DISCUSSION

Despite the exceptional nature of both the health emergency period and working exclusively from home, this study offers some insight into the impact of job and technological demands on WFC, as well as the importance of adequate recovery experiences. It also provides an overview of some difficulties associated with mandatory working from home that could prove useful for management policies even outside the time window of the quarantine. Given these premises, this study's findings showed that WFC may depend on the quantity of job requests, and also on the more or less conscious use of technology to fulfil excessive work demands, a feature of the always-on culture, rather widespread in Italy.

Results confirmed the first hypothesis: during mandatory work from home both cognitive de-

mands and off-TAJD are positively related to WFC, consistent with previous studies (28). In line with the difficulties of working exclusively remotely, notably concerning communication (43), people in high responsibility roles show higher levels of off-TAJD. Further, women reported higher levels of cognitive demands than men; a similar gender difference has been found in a previous study which considered workload (28). This finding could depend on both a fall-back on traditional gender roles and a greater job centrality, both factors that have been intensified during the pandemic⁴.

Regarding the effects of perceived stress related to ICT use to stay connected with others, results con-

4. ISTAT. Rapporto annuale 2020 - La situazione del Paese [Internet]. Retrieved from: <https://www.istat.it/it/archivio/244848>.

firmed its significant and positive relationship with WFC, consistently with literature on technostress (31). Aside from the technological stress involved in off-TAJD, contact-related stress, as investigated in this study, examined the technological overload and invasion during work, considering both professional (supervisors, colleagues) and rest of life (family, friends) relationships. Therefore, it offered a glimpse into the hardships in managing multiple roles during work from home experience and its negative consequences, regarding both family-to-work (interruptions, distractions, management of multiple domestic information) and work-to-family directions (requests during typical office hours). The risk associated with ICT use is likely higher during this health emergency, considering that high workload, combined with some personal traits and isolation, can increase the chance of resorting to work addiction as a dysfunctional coping strategy (32). Indeed, teleworking may be associated with various negative outcomes for the quality of life and for the workers' psychological and physical well-being (e.g., emotional exhaustion, occupational stress, musculoskeletal disorders) (44).

Concerning recovery experiences, results showed a negative relationship with WFC, thus confirming the third hypothesis. High levels of job demands can affect the recovery process (e.g., 45), and, specifically, the steady availability to work overtime can slowly impair the teleworker's psychological detachment strategies, thus increasing WFC (46). Despite the prolonged home working experience, participants showed moderate levels of off-TAJD and perceived stress related to ICT use to stay connected with others. Among those who care for a family member, which are mostly women, lower levels of recovery, and thus higher levels of WFC, have been observed, in line with the results of a recent study (30) that found a negative relationship between care tasks and recovery.

In view of these results, it should be remembered that several studies in pre-pandemic conditions have found the potential negative consequences of remote working for long periods (13, 23); it is therefore possible that mandatory work from home could affect recovery and intensify fatigue, due to increased domestic labour and responsibilities during the emergency. However, the pre-pandemic

literature has also highlighted that previous experience in remote working enables the development of balance management strategies (47): participants in this study had no prior experience of agile work, however, unlike many other people in the same period, they received a training that also covered psychosocial risks. The proposed training was certainly useful to understand the weaknesses of working from home; nevertheless, it was not sufficient, in terms of content, to move towards a new organization of work.

Practical implications

Considering the prolongation of the emergency situation, Kniffin and colleagues' (1) recommendations remain valid and current: organisations should be able to provide information, assistance programs and formalised opportunities for individual counselling, coaching and training. In particular, authors suggest enhancing training through virtual teams, focusing on their social and identity support functions: as already highlighted, the quarantine experience is full of stressors, including less access to information, fear and anxiety, frustration, and an increase of financial and digital divide (48). From this point of view, the organisation is responsible for maintaining the balance between its business continuity and workers' safety (2). The literature has highlighted that the adoption of family-friendly cultures can reduce WFC (17), as well as improve the effect of supervisors' support, a resource which is perceived as greater within a culture attentive to extra-work needs (49). Moreover, organizations should involve occupational doctors in monitoring the presence of dysfunctional situations and implement prevention programs, also in relation to the use of technologies.

In addition to the specific critical issues of the emergency context, it must be emphasised that agile work (and generally remote work) requires specific training, particularly for supervisors. This training should deal with multiple aspects, in addition to the more technical ones: management of tasks, objectives and time, concerning the daily fluctuations of job demands (e.g., 50); rules of technology use that observe the right to disconnect and recover (29); necessary skills to operate in a results-oriented

perspective, which encompasses delegating to collaborators and enhancing trust and autonomy (30). In many organisations, this is preceded by a broad cultural change (22) generating new, more transparent policies, followed by structured programs and practices that must then be supported and implemented by middle management; first of all, the promotion of autonomy and the redefinition of evaluation methods (30).

As pointed out by this study's results, however, the process takes time, since it has to deal with resistance rooted into the national culture. Organisations are the main responsible for individuals' recovery possibility, through a culture that respects disconnection and the reallocation of resources. Finally, cultural change cannot ignore the renegotiation of psychological contracts, especially concerning the topics of relationship and meaning of work.

Limitations

The study also has some limitations. First of all, its theoretical and research framework is limited to the psychology field; it would have been interesting to carry out/conduct the research in collaboration with clinicians and occupational physicians, in order to investigate also the effects on workers' health and wellbeing.

Moreover, remote working has been investigated during an emergency lockdown situation, with many factors influencing WFC and more in general workers' wellbeing (such as loneliness, social support, ...), which we did not consider in this study. Also, we did not include in the study specific organizational variables, related to leadership, culture, or evaluation process; nevertheless, employees could have been hesitant and cautious in revealing their perception about these aspects. Other limitations concern the cross-sectional design of the study, which prevents confirmation of causality, and the use of self-reported data. Considering the peculiar historical and social period during which the study has been conducted (the first Covid-19 lockdown), it will be interesting to repeat it over the years to observe these dynamics in different moments. Furthermore, the study has been carried out in a single healthcare organisation and for this reason results cannot be generalized to the whole population of

healthcare teleworkers; moreover, only 58% of employees completed the questionnaire, thus we gathered a partial picture within this specific company. Nevertheless, these findings indicate possible future directions useful for researchers and practitioners.

Considering that WFC includes several aspects that pertain to the extra-work domain, which are difficult to measure, future research should involve key informants, particularly supervisors and cohabitants, in order to more adequately explore how people manage the balance between the demands originating from different domains and any potential repercussion on both job and personal performance, on satisfaction and well-being in general, with a particular focus on gender differences. Finally, as regards results, the total of variance explained by the included variables showed a value not particularly high; this result, one more time, outlines the need to take into account further aspects to explain WCF.

CONCLUSION

In conclusion, the health emergency has exacerbated some difficulties typical of remote working, but it could also provide a useful contextual boost for overcoming cultural resistance to remote working, especially for those professional categories that, previously, were excluded from this opportunity, while also igniting the discourse about agile work management policies. This has been translated into a request by the Department of Public Function of the Presidency of the Council of Ministers, which required to draft the organisational plans for agile work (POLA): the guidelines remark the importance of monitoring and evaluating remote working, paying specific attention to well-being and work-life balance and making sure that the right to disconnect is guaranteed.

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