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Work-Family Boundaries in the Digital Age: A Study in France on Technological Intrusion, Work-Family Conflict, and Stress

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Keywords: Off-work Technology Assisted Supplemental Work (off-TASW); Work-family Conflict (WFC); Stress Perceptions

Abstract

Background: *Since previous studies have shown that the request of off-work technology-assisted supplemental work (off-TASW) can contribute to blurring the boundaries between the work and family domain by increasing work-family conflict (WFC), the purpose of this study is to go further, investigating how this relationship impacts stress perceptions.* **Method:** *A cross-sectional study that involved a sample of 221 French workers was carried out using a self-reported questionnaire. The data collected were analyzed by IBM SPSS 25.0 software, and a mediation model was tested.* **Results:** *The results showed that off-TASW was associated with higher levels of WFC (b=.32; p=.000), which was in turn associated with stress perceptions (b=.42; p=.000).* **Conclusions:** *This study contributes to understanding how the intrusion of technologies during off-work times impacts workers' perceptions of psychological wellbeing through work-family conflict. These findings should encourage the debate on the risks of staying connected to work through technologies during off-work and leisure time and stimulate the promotion of campaigns to make workers aware of their right to disconnection, to the benefits of detachment from work and recovery experiences.*

1. Introduction

From the '80s to now, we experienced a speedy evolution of Information and Communication Technologies (ICTs), which, combined with the advent of the Internet, have permeated the labor market, bringing new jobs, tasks, and ways of working. Technologies are useful for developing connections, information sharing, content creation, and storage [1]. Also, they facilitate work tasks [2] and participate in the achievement of organizational goals [3]. Furthermore, technologies permit shifting work from the official workplace to an offsite location [4], enabling people to work more smartly and flexibly [5], including working remotely from home, cafés, coworking spaces, transport, and also from far and isolated places, just having a functioning Internet connection. Correct use of technologies for work and a reasonable ICTs connection during off-work hours could be considered as resources in terms of job autonomy since they might help to defer workload and job demands [6] and they potentially enable people to differ work efforts and alternate moments of implication with a detachment to work [7]. However, the possibility of being constantly connected to work through technologies and as well to work anywhere at any time could at the same time lead to work intensification [8], interruptions and information

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overload [3], over-connectivity [9], workaholism [10], addiction to the Internet [11, 12] and to technologies in general [13]. Especially, the possibility of being solicited by job demands through technologies during off-work hours, weekends, and holidays could contribute to further blurring the boundaries between work and family domains [14], increasing the risk that professional imperatives may excessively nibble away the time normally devoted to rest, family, and leisure activities. By impacting the recovery and resources restoration process [15], work-related ICTs intrusion during off work could make people more vulnerable to job demands and stress [6].

Considering the pervasiveness of ICTs in our personal and working life, this study aims to investigate the role of the perceived request of technology-assisted supplemental work during off-work hours in wellbeing by analyzing its impact on stress perceptions through work-family conflict [14]. Several previous studies have investigated the relationship between technology-assisted supplemental work during off-work hours and work-related wellbeing outcomes, like job exhaustion [11], burnout [16], and workaholism [17]. However, the possibility of being solicited by professional demands through technologies during off-work hours, weekends, and holidays by increasing inter-role conflict due to the difficulty of simultaneously meeting job and personal needs may also impact general mental health, inducing stress perceptions. By studying the mechanism that links technology-assisted supplemental work during off-work hours to work-family conflict and stress perceptions, we intend to contribute to the debate on its role in the recovery and wellbeing process to make organizations, employers, health professionals, and employees aware of the health risks connected to the elevated off-work hours work-related technology intrusion in their life.

1.1. The Debate on the Risks of Work-Related Technology Intrusion in France and Italy

With the aid of technologies, employees can do teleworking, defined as the work shifted from the employer's premises to an offsite location thanks to using ICTs, such as desktop computers, laptops, smartphones, and tablets [4]. In addition, technologies help people to perform work more smartly and flexibly, as they enable a way of working, the so-called Italian legislation "*smart working*," where there are no time or space constraints. Employees can organize their activity by phases, cycles, and objectives to reconcile life and work times while favoring productivity growth [5]. Although the present study focuses on work-related technology solicitations during off-work hours, which may potentially impact work-family balance and induce stress perceptions, it is worth underlying that teleworking [18] and smart working [19] are in the focus of the debate regarding the impact of technologies' work-related use on people's wellbeing and of how technologies are changing the world of work and organizations.

If teleworking was implemented by organizations and regulations in 2004 and 2005 in Italy and France res, respectively [20], the debate about the risks of intrusion of technologies used for work-related reasons in our lives started later. In France, it was promoted by a study published in 2012 by the General Direction of Work and the Center of strategic analysis, which pointed out several risks associated: with work intensification, higher control of workers' activity, degradation of social relationships, information overload and porosity between life domains [21]. Facing all these issues, the social partners started to claim the right to disconnection [22] regulated by a law (the *Loi Travail* No. 2016-1088) that became effective in 2017. France was the first European country to adopt a general regulation to limit the risks of using technologies during off-work hours in the private sector. In Italy, the impulse to dialogue on the dangers connected to the use of technologies for work-related reasons was launched by the COVID-19 emergency [23]. Indeed, during the forced teleworking situations of the COVID-19 pandemic, people have had to adapt to working remotely.

Consequently, they have developed new skills and become more familiar with using technologies for work-related reasons. By having democratized and facilitated the adoption of teleworking and smart working, the global emergency has contributed to further blurring the boundaries between the work and the family domain, and it has spread a culture of the always-on [11, 24] where workers seem more subjected to feel the pressure to have to be constantly connected and available for work through

technologies [3, 14, 15, 25] even when not explicitly requested. This has raised worldwide new concerns about the wellbeing of employees who adopt remote working methods, leading the Italian political and social parties to update the regulation on smart working with a National Protocol in 2021 [26]. This document acknowledges this practice's advantages and issues and provides guidelines for its correct implementation in the private sector.

Nowadays, in the post-COVID-19 era, the work-related over-connectivity through technologies has become common and transversal to many different job domains [27], and many organizations, private and public, as well as self-employed workers, have decided to adopt the new ways of working outside the office as widespread practices, in a hybrid or full mode. Therefore, it is important to continue the debate on the intrusion of technologies used for work since it may impact the process of employees' recovery and wellbeing [6]. Although the existing regulations, the risk of an over-connectivity to technologies is continuously increasing, and laws are helpful but don't are sufficient to prevent people's wellbeing from the negative consequences of the intrusion of technologies in our lives [28].

1.2. The Relationship Between Off-TASW, Work-Family Conflict, and Stress Perceptions

The concept of technology-assisted supplemental work (TASW) has been introduced by Fenner and Ren [29] to designate work-related tasks performed with the aid of new ICTs (such as laptops, smartphones, and tablets) at home or apart from home during holidays and free time in the absence of a formal agreement between the employee and the company. In this study, we use a conceptualization of TASW as the employees' perceived request, and not formally defined, to respond to work solicitations from their organization through technologies during off-work hours, weekends, and holidays [11, 14], to which we refer henceforth as off-TASW.

Previous studies have considered off-TASW as an additional job demand [11, 14, 15] in the Job Demands-Resources model [30] developed to explain the process leading to burnout and work engagement. According to this model, external factors lead to stress only under certain circumstances, for example, when they represent a threat and are perceived negatively because of a lack of resources or when combined with other demands; otherwise, they could be perceived as boosting for wellbeing. For this reason, to define negative external factors, the authors prefer to use the term "*job demands*" over the term "*stressors*" since a stressor, that is, an external factor that leads to stress, would exert only a negative potential, and not a positive one, on most people in most situations [31]. Differently, additional studies have identified off-TASW directly as a stressor [32], within the framework of the Transactional Stress Theory [33], or more specifically as a source of technostress, which is the stress induced by technology use [34], because of its negative effects, for instance, it hinders employees' work and non-work performance, it consumes resources and makes it difficult the process of recovery, and it blurs the boundaries between work and family [34]. All combined, the results from the studies that have considered off-TASW both as a job demand and as a stressor converge in showing its negative outcomes: off-TASW seems negatively related to work-family balance [35, 36], it leads to work-family conflict [37, 38], it reduces wellbeing [39], it causes strain and distress [40, 41], burnout [41], it increases workaholism [10], and it reduces recovery experiences [15].

Considering that our study investigates the relationship between off-TASW and two negative outcomes, namely work-family conflict and stress perceptions, the conceptualization of off-TASW as a stressor within the framework of the Transactional Stress Theory [33] seems more suitable. Following this theory, when people face a potential stressor, they undertake a primary appraisal to determine whether they feel threatened. Then they do a secondary evaluation to activate resources and coping strategies to counteract the stressor and to avoid or reduce its long-term negative consequences. A stressor induces stress, which is the immediate reaction to the stressor, which can lead to strain. It is the consequence of exhaustion due to constant exposure to stressors without resources or coping strategies to counteract them. Since technologies are omnipresent, techno-stressors are considered chronic

stressors [34] experienced daily, resulting in depleting resources and making it harder to regain them through recovery. It follows a rise of vulnerability that can lead to inter-role conflicts, such as work-family and family-work conflict [35], which may increase the chance of feeling generally stressed. Since our study considers the relationship between a stressor, inter-role conflict, and stress without considering resources, coping strategies, or long-term reactions, we focus on the first part of the stress process, the primary appraisal.

To deepen the mechanism that links off-TASW to stress perception, we deemed it pertinent to include work-family conflict (WFC) as a possible mediator. In this study, we rely on Netemeyer and colleagues' conceptualization of WFC [35], who consider WFC along with family-work conflict (FWC) as two distinct but related forms of inter-role conflict where "demands of, time devoted to, and strain created by the job/family interfere with performing family/work-related responsibilities" [35, p. 401]. Inter-role conflict reduces commitment and job satisfaction, increases burnout, job tension, role conflict, role ambiguity, turnover intentions, and decreases life satisfaction [35]. Previous studies have stressed the importance of investigating demographic variables like sex, age, and having children when considering work-family conflict [14], as they are likely to influence its relationship with its antecedents and outcomes. Since our study focuses on the relationship between off-TASW and stress, we considered it relevant to investigate these dimensions with an explorative perspective by including them as control variables, although without defining specific hypotheses in their regard.

Therefore, based on the existing studies that have investigated the impact of off-TASW on work-family conflict and wellbeing outcomes, we suppose that:

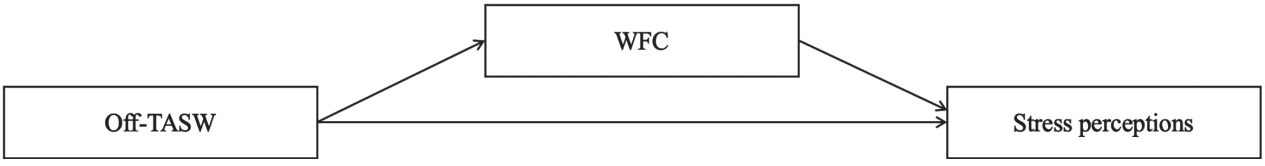
Hypothesis 1. The relationship between off-TASW and stress perception is mediated by WFC, controlling for sex, age, and having children. Figure 1 presents the hypothesized mediation model.

2. METHODS

2.1. Participants and Procedure

A cross-sectional study was conducted with a convenience sample of workers contacted via the snowball exercise. Participants received a message by e-mail where they were invited to complete an online self-reported questionnaire. An introduction of the study was first presented, where the research objectives, a reminder of voluntary participation and answers' anonymity, and instructions for the filling were explained. The demographic and professional data collection and the part dedicated to the study variables followed.

The total sample of the study was composed of 221 French workers from various sectors (i.e., industry, commerce, teaching and research, health, tertiary, and administration). Among participants, 67 were men (30.3%), 154 were women (69.7%), and 45.2% had children. Their mean age was 36.73 (Standard Deviation, SD=13.53, min 20 years old—max 65 years old); 17.6% had a secondary school degree, 22.2% had a degree corresponding to two years in university, 27.1% a bachelor's degree and 30% a master's degree. 86.4% of the participants worked full time, 78.3% worked in the private sector, 78.3% had an open-ended contract, 17.3% had a contingent contract, 3.7% were self-employed, 43.9% were executives, 46.2% were employees, and 4.1% were managers. The 12.2% had a tenure of less than one year, 36.7% between 1 and 5 years, 18.6% between 5 and 10 years, and the rest more than ten years.



Note. Sex, age, and having children were considered in the model as control variables.

Figure 1. The hypothesized mediation model.

2.2. Measures

Off-work technology-assisted supplemental work (Off-TASW) was assessed with the French adaptation of a scale previously used by Ghislieri and colleagues [11, 14] composed of three items. People were asked how often their company demanded them to use technology to work during off-work hours, weekends, and holidays. Responses were on a five-point scale, ranging from 1 = never to 5=always. An example item was "How often does your organization require you to answer phone calls and e-mails during off-hours?" Cronbach's alpha was .88.

Work-family conflict was assessed by the French adaptation of the WFC scale developed by Netemeyer and colleagues [35], which consisted of five items representing the direction of conflict from work to family and one added item expressing the direction of conflict from family to work. Responses were measured on a 5-point scale, ranging from 1=strongly disagree and 5=strongly agree. An example item was, "It is difficult for me to fulfill my family obligations because of my work." Cronbach's alpha was .90.

Stress perceptions were assessed by the French version of the Perceived Stress Scale (PSS-10) developed by Cohen and colleagues [36], composed of ten items. People were asked how often during the past two months they have experienced the situations proposed. Responses were registered on a frequency scale of 5-point, ranging from 1=never and 5=always. An example item was, during the past two months, "I felt stressed and nervous." Cronbach's alpha was .87.

Control variables such as sex, age, and having children were considered in this study based on previous studies that have highlighted their importance when considering the interference between the work and family domains [14]. Sex and having children were coded as dummy variables (0=men, 1=women; 0=no children, 1=having children).

2.3. Statistical Analysis

Data analysis was performed using IBM SPSS Statistics 25.0 software. We calculated descriptive statistics (mean and standard deviation) for each scale, Cronbach's alpha to measure the internal consistency of the scales, and Pearson's correlations (*r*) to observe bidirectional relationships between variables. In addition, Mplus 8 software was used to assess the measurement model of the study variables of the hypothesized research model.

The mediation was tested by a regression analysis using Model 4 in the SPSS macro PROCESS, with a boot-strapping approach [37]. In the regression, stress perceptions were placed as dependent variables, off-TASW as the independent variable, WFC as the mediator, and sex, age, and having children as the covariates.

3. Results

3.1. Descriptive Statistics

Table 1 reports the study variables' means, standard deviations, correlations, and internal consistencies. As expected, off-TASW was related to WFC

Table 1. Means, Standard Deviation, and Correlations Among the Study Variables in the total sample.

	Range	M	SD	1	2	3	4	5	6
1. Sex	0-1	-	-	-					
2. Age	-	36.73	13.53	.07	-				
3. Having children	0-1	-	-	.11	.69**	-			
4. Off-TASW	1-5	1.95	1.03	-.04	.06	-.05	(.88)		
5. WFC	1-5	2.16	.87	.01	.06	.01	.32***	(.90)	
6. Stress perceptions	1-5	2.52	.66	.15*	-.16*	-.12	.14*	.41***	(.87)

*N= 221; *p < .05; **p < .01; ***p < .001. Cronbach's alpha in brackets along the diagonal.*

(*r*=.32) and stress perceptions (*r*=.14). Furthermore, WFC was related to stress perceptions (*r*=.41).

3.2. Model Testing

The measurement model was first assessed as part of the data analysis strategy. By using Mplus 8, a Confirmatory Factor Analysis (CFA) revealed that the 3-factor solution yielded an adequate fit to the data ($\chi^2_{(149)}$=294.84, p<0.05; CFI=0.92; TLI=0.91; RMSEA=0.06, SRMR=0.06), thus verifying that all the items loaded onto their corresponding three underlying latent variables of our research model. Moreover, considering the research model was evaluated using self-reported data, we tested for potential Common Method Bias issues [38]. The common artifactual variance was assessed through Harman's [39] one-factor test, thus showing that the first factor accounts for 34.09% (as recommended, less than 50%). Findings support, therefore, the non-presence of CMB in the measures used in the present study.

Regression analysis investigated the hypothesis that WFC mediates the relationship between off-TASW and stress perceptions controlling for sex, age, and having children. The results of the hypothesized model are reported in Table 2. Concerning the direct effects, off-TASW was positively related to WFC, *b*=.32 (*p*=.000), 95%CI=[.16; .38] and stress perceptions, *b*=.15 (*p*=.023), 95%CI=[.01; .18]. Furthermore, WFC was a significant predictor of stress perceptions, *b* = .42 (*p* = .000), 95%CI=(.22; .41).

Our final model explained approximately 10% of the variance in WFC (R^2=.10) and 23% of the variance in stress perceptions (R^2=.23). After controlling for the mediator, WFC, off-TASW was no longer a significant predictor of stress perceptions (*b*=.02, *p*=.796), 95%CI=[-.07; .09]. Therefore, results are consistent with full mediation.

The estimated indirect effects are shown in Table 3. More specifically, the indirect coefficient was significant within a 95%CI that did not comprise zero, *b*=.14, SE=.03, 95%CI=[.08; .20], meaning that off-TASW was associated with stress perceptions scores that were approximately .14 points higher as mediated by WFC. Concerning control variables, sex was positively related to stress perceptions. Thus, women reported higher levels of stress in response to off-TASW and WFC; the relationship between age and stress perceptions resulted also significant, however with a small beta standard coefficient (*b*=-.18, *p* =.035), this still seems to indicate that younger workers reported slightly higher scores of stress perceptions.

4. DISCUSSION

The use of technology, especially among young people, is increasing increasingly, thus invading every area of people's lives. It seems almost impossible to implement that distancing from technology called "*IT distancing*" or *"digital detox*" [40]. The risk, therefore, is to be always connected, and this does not only happen at work. Even outside work tasks

Table 2. Path coefficients for WFC and stress perceptions.

***N*=221** **Path coefficients**						
	To WFC		**To Stress**		**To Stress**	
	b	**SE**	***b***	**SE**	***b***	**SE**
Sex	.01	.12	.17**	.09	.16**	.08
Age	.02	.01	-.17	.00	-.18*	.00
Having children	.02	.16	-.02	.12	-.03	.11
Off-TASW	.32***	.05	.15*	.04	.02	.04
WFC					.42***	.04
	R^2=.10***		R^2=.07**		R^2=.23***	

*Note: * p<.05; ** p<.01; *** p<.001; standardized coefficients are reported.*

Table 3. Mediation analysis summary.

Effect	β	SE	95% CI		*p*
			LL	UL	
Total Effect					
Off-TASW → Stress	.15	.04	.01	.18	.023
Direct Effect					
Off-TASW → Stress	.01	.04	–.07	.09	.796
Indirect Effect					
Off-TASW → WFC → Stress	.14	.03	.08	.20	

*Note: N= 221; * p .05; ** p< .01; *** p<.001; 95% CI= 95% confidence interval using the boot-strap bias-corrected method using 5000 samples. L =lower limit; UL=upper limit. Standardized coefficients are reported.*

and office hours, people use technology for personal purposes, creating a vicious circle where technology is omnipresent [41]. It is likely to interfere with people's capability to accomplish their several life roles leading to negative consequences on their wellbeing. Conceptualizing stress as a process within the framework of the Transactional Stress Theory [33], we intended to understand better the mechanism through which off-TASW is linked to stress perceptions. Our hypothesis posited that off-TASW might be perceived as a work techno-stressor likely to induce stress perceptions through WFC, a form of inter-role conflict conceptualized in our model as a first consequence of off-TASW. The results confirmed our hypothesis: in our sample, off-TASW is related to higher WFC, which is, in turn, related to stress perceptions.

Furthermore, WFC was revealed to mediate the relationship between off-TASW and stress perceptions. More specifically, among our 221 participants, we found that when they feel the intrusion of technologies during off-work hours, leisure time, weekends, and holidays, job demands spill over to the family, and consequently, stress perceptions increase. This is in line with previous studies that have found positive relationships between the intrusion of technologies during off-work hours and WFC [14, 42, 43, 44] and the literature that identified WFC as an antecedent of mental health [45]. In our study, the direct relationship between off-TASW and stress perceptions disappears when considering WFC. Therefore, as an inter-role conflict, WFC is a source of stress deeply implicated in explaining the relationship between off-TASW and stress perceptions. This finding is consistent with previous studies that found WFC to mediate between job stressors and impaired psychological health [46]. Furthermore, the results of this study add to the previous literature that identified an indirect relationship between off-TASW and negative work-related wellbeing outcomes, for example, the intrusion of technologies during off-work times and job exhaustion explained by internet addiction [11], reduced recovery [15] and workaholism [17]. Being connected to work through technologies during off-work hours seems to represent for the participants of our study a demanding condition that implies resource consumption which makes it difficult for them to meet at the same time their work and family needs leading these two roles into conflict with raising in their stress perceptions as a result. When testing our model, we decided to control for some demographic characteristics considered important in the literature on work-family balance [14], namely sex, age, and having children. Our results showed that sex is related to WFC and stress perceptions: women reported more work-family conflict and stress perceptions in response to off-TASW than men. Therefore, in our sample, off-TASW seems to make it more difficult for women to meet their family demands and raise their perception of WFC, which is related to higher stress perceptions. This result may be explained by an asymmetry between men and women in their work and family roles [47], where women's roles are stereotypically home maintenance and family care.

In contrast, men feel less concerned with family and caring tasks [48], and social expectations prefigure them more present in the work field than in the family [49]. Furthermore, among our participants, a really small significant relationship was also found between age and stress perceptions, suggesting that younger workers in our sample may feel more stressed in response to WFC and technological solicitations. This is in line with previous studies showing that younger people are more at ease in using technologies [50], and they tend to develop more addiction to technologies [51] that may represent a risk to their mental health.

4.1. Practical Implications

This study has practical implications for occupational physicians, organizations, employers, and workers. The last report of the European Survey of Enterprises on New and Emerging Risks, ESENER 2019 [23], has associated digitalization with psychosocial risks and investigated how establishments manage digitalization risks in the workplace. Workers were asked whether establishments have discussed the possible OSH (Occupational Safety and Health) impact of technologies. Although in 2019, just a small percentage of respondents, 18% and 16% in France and Italy, respectively, responded affirmatively, we can consider that after the COVID-19 pandemic that has brought working from home as a new normal, this topic has become more urgent. In line with the previous literature, our study showed that off-TASW was a techno-stressor that induces stress perceptions by increasing WFC. Research evidence converges that it may be considered a new psychosocial risk factor in the workplace. Since psychosocial risks are one of the main concerns for organizations and employers, occupational physicians should include this topic in their interventions and aim to awaken people to these issues.

In France, primary prevention campaigns about psychosocial risks and the chances of using technologies for work-related reasons are more common among the community of occupational physicians that intervene in organizations than in Italy. Particular attention is given to raising awareness among workers about their right to disconnection and to suggesting them strategies to disconnect from technologies, during and outside working hours, for example, taking breaks, segmenting work into different tasks, alternating sitting positions to stand up, by doing physical activities during free time, by reducing exposure to screen and devices before sleeping and by making healthy lifestyles choices. This outreach practice is essential and should continue by relying on research studies that constantly update the knowledge on the risks of digitalization. In Italy, the law on prevention and safety in the workplace (D.Lgs.81/2008) specifies the obligation for employers to assess risks to the safety and health of workers, including those connected to work-related stress. Employers are responsible for editing the Risks Evaluation Document (Documento di valutazione dei rischi, DVR), which identifies the possible risks present in a workplace and is used to analyze, evaluate and try to prevent dangerous situations for workers. The employer may appoint a competent doctor to collaborate in risk assessment and health surveillance [52]. Considering the actualization of the regulation on smart working in Italy, employers and occupational physicians should include in the DVR the risks connected to this new way of working and the professional use of technologies. Campaigns of primary prevention that have suggestions on good practices, such as those cited previously, should be encouraged in organizations. It can be argued that organizations could promote specific training for their employees to make them aware of the moderate use of technology, the psychological and physical problems that prolonged use entails, and the right to disconnect outside working hours [53]. Appropriate human resources policies could also be adopted within the company to decrease or even discourage the use of e-mail and other forms of communication outside working hours [27] or by creating a server shutdown for each worker outside their working hours [54]. An important role is that of managers who should show flexibility towards their employees and not contact them outside working hours because it would make them feel obliged to respond to their boss' requests or expect employees always to be on call, ready, and able to respond promptly to any request for information [55].

4.2. Limitations

This study has important limitations. Firstly, it is cross-sectional, and a causal relationship between the study variables cannot be established. It is, therefore, possible to imagine alternative patterns that may explain the link between the variables considered in this study; for example, people who report high levels of stress might find it difficult to be efficient both in the professional and the family domain, and they could tend to stay connected to work through technologies during off-work hours to compensate [3]. Future studies with longitudinal and cross-sectional designs should deepen the relationship between off-TASW, WFC, and stress perceptions to verify further the relationships investigated in our study. Secondly, since we used a convenience sampling method, our results are not generalizable because our sample does not represent a particular population.

Further studies should test the relationships of our analysis using a representative sample or selecting a population that shares the same socio-demographic and professional characteristics, for example, employees from a specific firm or working in the same department. Concerning measurements, we used a conceptualization of TASW that did not consider the effective use of technologies during off-work times in response to the solicitations by workers' organizations. Further studies should adopt other conceptualizations of off-TASW to measure to what extent technologies are used during off-work and how this use impacts WFC and stress. Moreover, following previous studies, to measure WFC, we used an adaptation of the Netemeyer and colleagues' WFC and FWC scales [35], combining four items of WFC with one single item of FWC [24]. It would be interesting to investigate the impact of off-TASW on inter-role conflict and stress, taking WFC and FWC separately. Furthermore, we considered exclusively the primary appraisal of the stress process. Further research should extend the secondary appraisal analysis by considering resources and coping strategies that people may activate to counteract techno-stressors inducing WFC and stress.

Moreover, we considered stress perceptions, a psychological dimension, as an outcome. Further studies should also evaluate the impact of off-TAWS on physical health results, namely muscle-skeleton disorders. Finally, our results showed gender differences, future studies should investigate further the role of gender in the studied relationships, and it might be interesting to consider also other situational aspects that may be important confounders associated with work-family conflict, for example, characteristics of a person's situation, such as the condition of living (alone, with a partner or with people to care of), the number and age of children and also professional characteristics, namely number of off-work working hours.

5. Conclusions

In conclusion, the spread of an over-connected culture in the work context brings some risks. It contributes to blurring the boundaries between the work and family domain, increasing work-family conflict and the stress level of working people. Even if some regulations already exist concerning smart working and the right to disconnection, our results encourage continuing the debate on the health risks associated with the intrusion of technologies during off-work times to make urgent the actualizations of occupational physicians' practices in terms of promotion of primary prevention addressed to organizations, employers, and workers.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Declaration of Interest: The authors declare no conflict of interest.

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