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### ► **To cite this version:**

Tiphaine Huyghebaert, Evelyne Fouquereau, Fadi-Joseph Lahiani, Nicolas Beltou, Guillaume Gimenes, et al.. Examining the longitudinal effects of workload on ill-being through each dimension of workaholism. International Journal of Stress Management, 2018, 25 (2), pp.144-162. <10.1037/str0000055>. <hal-02397406>

**HAL Id: hal-02397406**

**<https://hal.science/hal-02397406v1>**

Submitted on 27 Oct 2022

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HAL Authorization

*Running head:* WORKLOAD, WORKAHOLISM AND ILL-BEING

## **Examining the Longitudinal Effects of Workload on Ill-Being through each Dimension of Workaholism**

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This is the prepublication version of the following manuscript :  
Huyghebaert, T., Fouquereau, E., Lahiani, F.-J., Beltou, N., Gimenes, G., & Gillet, N. (2018).  
Examining the longitudinal effects of workload on ill-being through each dimension of workaholism.  
*International Journal of Stress Management*, 25(2), 144–162. <https://doi.org/10.1037/str0000055>.  
© 2018. This paper is not the copy of record and may not exactly replicate the authoritative document  
published in *International Journal of Stress Management*.

### **Abstract**

This research explored the role of the behavioral (i.e., excessive work) and the cognitive (i.e., compulsive work) dimensions of workaholism in explaining the effects of workload on managers' work-family conflict and lack of psychological detachment. For this study, data was collected at two time points, over a three-month period, from a sample of 393 French supervisors working in the healthcare setting. Results from a cross-lagged model based on structural equation modeling indicated that workload positively predicted managers' tendency to work excessively, but it was not significantly related to their tendency to work compulsively. In turn, working excessively had positive effects on supervisors' work-family conflict and lack of psychological detachment. Working compulsively did not significantly predict either of these outcomes over time. Overall, these findings shed light on the mechanisms involved in the longitudinal relationship between managers' work experience and their functioning outside the job. More specifically, this study goes beyond previous research by emphasizing that the two dimensions of workaholism have differential antecedents and outcomes over time. Theoretical contributions and perspectives, as well as implications for practice are further discussed.

*Keywords:* workload; workaholism; work-family conflict; lack of psychological detachment; managers.

In an era of ever-growing technology and constant connectivity, boundaries between the work and home domains have become blurry, and individuals are growing aware of the necessity to disconnect from work in order to protect their psychological health. Research has consistently demonstrated the detrimental effects of granting an excessive importance to the work domain. For instance, authors showed that, in various occupations, higher workload could take a toll on employees' personal and private life in the form of work-family conflict (i.e., WFC; Geurts, Kompier, Roxburgh, & Houtman, 2003). Others demonstrated, in a heterogeneous sample, that excessive workload could also impede workers' capacity to psychologically detach from their professional concerns once the work-day is over (i.e., lack of psychological detachment; Sonnentag & Bayer, 2005). Yet, research is needed to confirm these effects longitudinally and in specific populations. This paper therefore offered to investigate how workload might influence these outcomes (i.e., WFC and lack of psychological detachment) over time in a sample of managers working in the healthcare setting.

Additionally, this study aimed to explore the mechanisms underlying these longitudinal relationships, by looking into the role of workaholism. Indeed, little is known about the mechanisms explaining these effects. Yet, previous studies showed workaholism to be an important issue for Dutch managers in various industries (Taris, van Beek, & Schaufeli, 2012), and to be associated with workload in a sample of Finnish managers employed in a wide range of industries (Mäkikangas, Schaufeli, Tolvanen, & Feldt, 2013). It was also shown to be associated with WFC in a sample of Japanese workers in a variety of occupations (Shimazu, Demerouti, Bakker, Shimada, & Kawakami, 2011) and with lack of psychological detachment in a large sample of Dutch faculty staff members (Van Wijhe, Peeters, Schaufeli, & Ouweneel, 2013). Hence, the current research offered to investigate the longitudinal effects of workload on WFC and poor psychological detachment, through the mediation of workaholism, in a specific sample of supervisors.

We looked into these links in light of several resources-oriented theories. First, conservation of resources theory posits that individuals have a natural motivation to acquire, retain, and protect the resources they value, and that when these resources are threatened, lost, or not equally compensated in return, negative outcomes ensue (Hobfoll, 2001). Second, Edwards and Rothbard (2000) offer a similar perspective specifically applied to the work-home interface and state that one's resources (e.g., time, attention, energy) are limited. Therefore, when one uses their resources to fulfill one's role obligations (e.g., work), they can no longer use those same resources to fulfill another role's obligations (e.g., family) and may not be able to function optimally in this second role. Finally, the effort-recovery theory (Meijman & Mulder 1998) and the conceptual approach of incomplete recovery (Geurts & Sonnentag, 2006) argue that resource expenditure at work lead to cumulative psychobiological overload reactions, and that under optimal circumstances, the psychophysiological systems activated during work return to and stabilize at a baseline level after a short respite from work. However, these theories suggest that when workers experience high workload, they allot more resources to their job and therefore need more time to replenish those resources (Sonnentag & Bayer, 2005). Paradoxically, excessive workload most usually comes with extra time spent at work, which does not allow for such respite. Hence, the recovery process may be incomplete, and the psychophysiological systems remain activated. Altogether, we believed these theories offered a valuable framework to deepen our understanding on *how* higher workload may drain workers' resources and thus yield to detrimental outcomes.

Indeed, WFC constitutes a major concern for both individuals and organizations. More specifically, WFC can be detrimental to employees in terms of family-related outcomes (e.g., lower family satisfaction), work-related outcomes (e.g., burnout), or domain unspecific

outcomes (e.g., lower life satisfaction) (Michel, Kotrba, Mitchelson, Clark, & Baltes, 2011). Moreover, because workers experiencing WFC consume their resources in the professional area at the cost of their private life, they are likely to withdraw from their jobs in ways that are harmful to the organization, such as absenteeism or turnover (Ferguson et al., 2016), in order to protect themselves from an additional loss of resources (Hobfoll, 2001).

Another –yet as detrimental– way the professional area can intrude on individuals' lives outside of work is when their professional activity makes it hard for employees to psychologically detach from work once the day is over. Lack of psychological detachment is conceptualized as a cognitive-emotional state (Fritz, Yankelevich, Zarubin, & Barger, 2010) that refers to remaining cognitively preoccupied by work during off-job time (Sonnentag, Binnewies, & Mojza, 2008). This inability to completely disconnect from work impedes employees' recovery process (Sonnentag & Fritz, 2007). Indeed, not being able to psychologically detach from work obstructs the replenishment of resources as the psycho-physiological arousal induced by work remains elevated (Sonnentag & Bayer, 2005). Hence, poor psychological detachment is associated with adverse health effects such as burnout in nurses (Allen, Holland, & Reynolds, 2014) or depressive symptoms in a variety of occupations (Sonnentag & Fritz, 2007). Lack of psychological detachment can be detrimental for organizations as well, since employees who do not psychologically detach from work during off-job time come back to work in a physical and affective state that does not allow them to perform as well (Sonnentag, 2012).

Even though WFC and poor psychological detachment are important issues for most workers, they are of great concern to the healthcare setting, and more specifically to managers working in this industry. Indeed, the healthcare industry is characterized by ongoing care and services, and inherently demanding job characteristics (e.g., workload, night/weekend shifts, on-call duty) which make it more likely for the work area to collide with employees' personal lives (Grzywacz, Frone, Brewer, & Kovner, 2006). Moreover, even though they are officially done with their workday, supervisors are likely to keep working at home (Park, Fritz, & Jex, 2011), or to ruminate on work-related issues (Brosschot, Gerin, & Thayer, 2006), which is likely to consume resources (e.g., time, attention, energy) individuals could have devoted to their family, thus generating WFC (Edwards & Rothbard, 2000). Similarly, because managers might have work-related thoughts and behaviors once at home, they are more inclined to experience a lack of psychological detachment from work (Sonnentag & Bayer, 2005).

### **Workload, WFC, and Lack of Psychological Detachment**

First, even though WFC can be related to some individual (e.g., negative affectivity) or familial characteristics (e.g., family support), research showed that work-related antecedents were important antecedents of WFC (for a review, see Michel et al., 2011). Among these determinants, workload was emphasized by numerous studies as importantly associated with WFC. In the current study, we operationalized workload in terms of managers' perception of their pace and amount of work, wherein higher scores reflect a sense of having too much work to do within the given timeframe (Lequeurre, Gillet, Ragot, & Fouquereau, 2013). High workload implies that employees devote such time and efforts to their job that they are left with insufficient time and energy for their personal and familial activities. These workers are therefore more prone to consider that their professional life impedes the quality of their private life (i.e., WFC) (Frone, 2003).

Second, research has mostly focused on the consequences of psychological detachment. For instance, Fritz et al. (2010) found that it was related to performance in a sample of administrative employees from U.S. universities. However, some scholars did look into the antecedents of psychological detachment. As an example, a study by Sonnentag, Kuttler, and Fritz (2010) demonstrated that when confronted with an excessive workload (e.g., time pressure and long work hours), Swiss protestant pastors were less able to

psychologically detach from work during their time off. Indeed, an important workload mobilizes more resources and comes with a prolonged psycho-physiological activation, it can also imply longer work hours. It may therefore leave employees with less time to recover after work (Sonnetag, 2012), during which they might even keep thinking about the demands of their work day and anticipate the upcoming day's workload, or even keep working at home to complete some work tasks. These situations thus refer to cognitions that are, by nature, incompatible with psychological detachment (Sonnetag & Bayer, 2005).

WFC has often been under consideration for its mediating effects between organizational dimensions such as workload and well- and ill-being. For instance, Geurts et al. (2003) showed that WFC fully mediated the relationship between workload and depressive mood and health complaints. Yet, there is a paucity of research on the mechanisms that might explain the effects of a high workload on WFC itself. Moreover, the mediating role of psychological detachment in the relationships between job stressors and well- and ill-being has been well-documented. For instance, Pereira and Elfering (2014) demonstrated that lack of psychological detachment partially mediated the negative effect of social stressors at work on sleep quality. However, only few authors (e.g., Park et al., 2011) have considered the mechanisms through which individuals' work experience might generate lack of psychological detachment itself. Nevertheless, recent research showed overcommitment to be a full mediator in the relationship between high workload and poor psychological detachment in a heterogeneous sample of Israeli employees (Potok & Littman-Ovadia, 2014). In other words, this study suggests that an important workload reinforces employee's tendency to excessively commit to their work, which in turn inhibits their ability to mentally switch off. Specifically, high workload, by encouraging employees to overcommit, consumes their resources and induces a sustained stress reaction, which results in low psychological detachment. Therefore, "excessive striving" (i.e., overcommitment) (Siegrist, 2001, p. 55) appears to be an important mechanism to explain the detrimental effects of high workload on employees' experiences outside of work, which questions the role of another form of overstriving that is workaholism.

### **Workload and Workaholism**

Initially conceptualized by Oates to depict his own work addiction (1971, p. 11) as "the compulsion or the uncontrollable need to work incessantly", workaholism was then defined and measured among social workers with academic positions as the combination of a high work involvement, a high drive to work because of inner pressures, and a low enjoyment of work (Spence & Robbins, 1992). More recently, Ng, Sorensen, and Feldman (2007) reviewed different conceptualizations of workaholism in a variety of occupations and cultures, which led them to underscore two core elements that consistently emerged from these definitions: (1) a tendency to work excessively hard and beyond what is reasonably expected to meet one's job requirements, at the expense of other important life roles, and (2) a propensity to be obsessed with work in the form of persistent and frequent work-related thoughts, even when not working. Hence, Schaufeli, Shimazu, and Taris (2009a) defined workaholism as "the tendency to work excessively hard (behavioral dimension) and being obsessed with work (cognitive dimension), which manifests itself in working compulsively" (p. 322). In other words, they conceptualized workaholism as a syndrome based on the co-occurrence of working excessively (WE) and working compulsively (WC). Though both these dimensions are required to the definition of workaholism, one should note that authors encourage future research to examine how each of these dimensions of workaholism independently relate to other constructs (Schaufeli, Bakker, van der Heijden, & Prins, 2009b). For instance, a recent study showed that it was conceptually correct to study how these two dimensions distinctively associate with other variables (Barber & Santuzzi, 2015, Study 1). Specifically, results revealed that WE was significantly and positively linked to self-

monitoring, while the relationship between WC and self-monitoring was not significant. More generally, this conceptualization has since been largely adopted as it was developed in two different cultures (i.e., Asian and European samples) that are very different in terms of working hours and value attached to work, and therefore allows for cross-cultural generalizability. For instance, it showed to be valuable in a sample of Italian workers (Balducci, Cecchin, Fraccaroli, & Schaufeli, 2012) as well as among Japanese (Shimazu et al., 2011).

Research on the antecedents of workaholism has mostly focused on its individual determinants. For instance, Clark, Lelchook, and Taylor (2010) showed that U.S. workers' perfectionism and dispositional affectivity significantly contributed to explain their workaholism. Another line of research suggests that people can develop workaholism because their environment facilitates or even rewards this form of heavy work investment (Ng et al., 2007; Schaufeli et al., 2009b). Indeed, employees who go beyond the minimum standard are most often considered valuable in the workplace (Porter, 1996). Hence, workaholism appears to be an acceptable and even valued addiction that organizations do not necessarily try to prevent, but that, on the contrary, they are inclined to support and reinforce. Managers' workaholism is even more likely to be encouraged by organizations as their jobs are less structured and controlled than others' (Aziz & Zickar 2006; Kanai & Wakabayashi, 2001). Moreover, in these jobs that come with great responsibility, heavy work investment in general tends to be seen as a sign of dedication and commitment, which is thus rewarded. Finally, managers' workaholism might also be reinforced as they are given opportunities to heavily invest in their jobs in many forms as communication technologies allow them to work excessively from any location, at any time, and thus relieve their compulsive need to work (Burke, 2001; Ng et al., 2007).

By looking into how the work environment might push or enable workaholic behaviors, research has emphasized some organizational factors that might act as drivers of workaholism. For instance, Kanai and Wakabayashi (2001) showed that high workload was related to increased levels of workaholism in both white- and blue-collar Japanese employees. Yet, although studies demonstrated that an excessive workload can facilitate work addiction, scholars pointed out the lack of longitudinal studies examining job demands as triggers for change in workaholism (Mäkikangas et al., 2013), and the necessity to explore these relationships by looking into the WE and WC dimensions (Molino, Bakker, & Ghislieri, in press). Hence, the current study offered to investigate how workload constitutes a fertile ground for triggering the development of each dimension of workaholism, over a three-month period of time. We expected this specific time lag to be appropriate as it goes beyond day-to-day fluctuations of employee ill-being (Derks, van Mierlo, & Schmidt, 2014), but it is still short enough to capture changes in supervisors' health, as a reflection of their efforts to deal with specific organizational demands (Zaheer, Albert, & Zaheer, 1999). More specifically, we assumed that, over time, high workload would yield to an increase in each dimension of workaholism.

On one hand, one can assume that the more important their workload is, the more managers will work to achieve their tasks, and the more it might make them work beyond what is required from them. Indeed, when facing a high workload, workaholics might feel like they have to excessively strive to meet this demand, as they exhibit higher levels of perfectionism and are less able to ask for help (Bonebright, Clay, & Ankenmann, 2000). They might thus feel that they, alone, have to perfectly achieve this increased workload. Higher workload may therefore reinforce their tendency to work excessively hard and beyond what is reasonably expected to meet their job requirements (Schaufeli, Taris, Van Rhenen, 2008). In other words, an increase in workload might trigger and develop the WE component of

workaholism, since managers might over-try to align their behaviors with this organizational demand.

*Hypothesis 1: Workload would positively relate to WE.*

On the other hand, the more important their workload gets, the more managers might think about it and about the necessity to fulfill all of their tasks, they might even fear that this workload could get bigger if they stopped working. Hence, they might become obsessed with such an overload, and start working compulsively in an effort to relieve that cognitive tension, or at least to avoid any additional tension.

*Hypothesis 2: Workload would positively relate to WC.*

### **Workaholism, WFC, and Lack of Psychological Detachment**

One main characteristic of workaholics is that they are ready to spend an excessive amount of time and effort at work at the expense of their personal life, which is, in essence, incompatible with work-life balance (Porter, 2001). Indeed, research has repeatedly demonstrated the positive relationship between workaholism and WFC. For instance, Shimazu et al. (2011) studied a heterogeneous sample of Japanese employees and showed that workaholics were more likely to experience WFC than others. Yet, to the best of our knowledge, no studies looked into the distinct effects of each workaholism dimension on the work-home interface. In the current study, we argued that an increase in both dimensions of workaholism would lead to more WFC. On one hand, WE is characterized by a focus on excessive work and a neglect of other life areas (Porter, 1996). When working excessively, managers devote a major amount of time and energy to their professional activity. However, those resources are limited (Edwards & Rothbard, 2000) and can therefore not be invested with friends and family. Hence, managers who work excessively might experience conflict between their work and family lives (i.e., WFC) because of the scarce resources left to allot to their personal life.

*Hypothesis 3: WE would positively relate to WFC.*

On the other hand, the compulsive tendencies underlying the cognitive aspect of workaholism (i.e., WC) make it difficult for employees to stop working, even when they have the opportunity to do so (Porter, 2001). Moreover, because they are obsessed with their work, they are more likely to have persistent work-related thoughts, which might make them less cognitively and emotionally available for their family, and even generate conflict with their loved ones because of the constant priority they give to their work. Hence, those employees with compulsive tendencies might experience WFC, since their obsession with work overshadows their non-work priorities.

*Hypothesis 4: WC would positively relate to WFC.*

Additionally, workaholism is seen as an addiction that makes it problematic for employees to think about anything other than work (Porter, 1996), which is by nature incompatible with psychological detachment from work during time off the job. For instance, research showed that the more Dutch faculty employees reported workaholism, the more they lacked psychological detachment during non-work hours (Van Wijhe et al., 2013). However, to our knowledge, no studies have examined the differentiated effects of each workaholism dimension (i.e., WE and WC) on workers' lack of psychological detachment. In the current study, we argued that an increase in both dimensions of workaholism would lead to an increased lack of psychological detachment. On one hand, when working more than what is reasonably required from them (i.e., WE), workers consume their resources and have insufficient opportunities to recover from these efforts (e.g., relaxing, sleeping) since they work long hours (Sonnetag & Zijlstra, 2006). Moreover, when working excessively, managers spend longer hours on the job but also tend to engage in work-related activities once at home, which is incompatible with psychological detachment (Sonnetag & Bayer, 2005).

*Hypothesis 5: WE would positively relate to lack of psychological detachment.*

On the other hand, because of their compulsive tendencies, workaholics are described as “unable to take time off or to comfortably divert their interests” (Cherrington, 1980, p. 257). Leisure time can even be seen as unenjoyable or undesirable for workaholics, which makes them unable to relax during non-work hours (Brady, Vodanovich, & Rotunda, 2008). Indeed, workaholics “persistently and frequently think about work when they are not at work” (Taris, Schaufeli, & Verhoeven, 2005, p.39). By not being able to put their mind at rest during their time off the job, managers might thus be unable to psychologically disengage from work once at home (van Beek, Taris, & Schaufeli, 2011). Moreover, Balducci et al. (2012) showed that this inner compulsion to work was related to a high arousal in negative affect in employees from the Italian health and public industries. Therefore, workaholic managers might be more likely to be anxious and ruminate about work. This constant tension is thus likely to make them unable to psychologically detach from work.

*Hypothesis 6: WC would positively relate to lack of psychological detachment.*

### **The Mediating Role of Workaholism**

Based on the aforementioned rationale, our research finally aimed to examine whether each dimension of workaholism (i.e., WE and WC) independently mediated the longitudinal effects of workload on WFC and lack of psychological detachment. A study recently showed workaholism to be a mediator in the relationships between job demands, including workload, and WFC and exhaustion in Italian employees from various occupations and sectors (Molino et al., in press). Yet, this research was cross-sectional in nature and therefore did not allow to examine the longitudinal effects in the relationship between the studies dimensions. Moreover, this mediational effect was demonstrated in a heterogeneous sample, and authors called for a focus on specific populations (e.g., managers). Finally, this study did not use the WE and WC conceptualization of workaholism, and could therefore not draw conclusions regarding how each of these core components of work addiction relate to other dimensions.

In the current research, we hypothesized that, over time, workload could reinforce managers’ tendency to work excessively and compulsively. We further proposed that these excessive behaviors (i.e., WE) and internal compulsions to work (i.e., WC) would in turn deteriorate employees’ experiences outside the job (i.e., WFC and lack of psychological detachment) over a three-month period of time.

*Hypothesis 7: WE and WC would fully mediate the effects of workload on both WFC and lack of psychological detachment.*

## **Method**

### **Participants**

For this study, managers working in the French healthcare setting were contacted through their employer. The exact number of managers who were initially approached remains unknown, as we do not know precisely how many people employers forwarded the email to, but it is estimated between 5 000 and 10 000. At Time 1, a total of 1 054 managers working full-time took part in the online survey. Among these participants, 393 agreed to complete the questionnaire again at Time 2 (retention rate = 37.29%) and represented the final sample. Their average age was 48.12 ( $SD = 7.72$ ), 124 of them were women, 265 were men, and 4 did not specify their gender. These managers were mostly married (54.96%) or living with someone (15.78%), while fewer of them were single (10.94%), divorced (10.43%), in a civil union (6.62%), or widowed (1.27%). Most of these participants held a general management position (49.62%), 20.87% were managers in a medical or paramedical crew, 15.01% managed a team of social workers, 9.67% were managers in administrative departments, and 4.83% managed a technical team.

### **Measures**

All measures were administered in French. More specifically, all scales were either developed or already validated in French, except for the lack of psychological detachment scale, which was translated in French using the standard back-translation technique (Brislin, 1980).

**Workload.** Workload was assessed with a subscale from the *Questionnaire sur les Ressources et Contraintes Professionnelles* (i.e., *Job Resources and Demands Questionnaire*; Lequeurre et al., 2013) where responses were indicated on a 5-point scale ranging from 1 (*never*) to 5 (*always*). More specifically, four items (T1  $\alpha = .87$ , T2  $\alpha = .88$ ) measured workload (e.g., « Do you have to hurry in order to complete your tasks? »).

**Workaholism.** WE and WC were measured with two subscales from the Dutch Workaholism Scale (Schaufeli et al., 2009a) validated in French by Sandrin and Gillet (in press). Participants were asked to rate on a 4-point scale ranging from 1 (*never*) to 4 (*always*) the extent to which they experienced the described situations. Five items assessed WE (T1  $\alpha = .79$ , T2  $\alpha = .78$ ) (e.g., “I find myself continuing to work after my coworkers have called it quits”) and five items referred to WC (T1  $\alpha = .79$ , T2  $\alpha = .80$ ) (e.g., “I feel that there is something inside me that drives me to work hard”).

**WFC.** WFC was measured with a subscale from the French version of the Survey Work Home Interaction Nijmegen (Lourel, Gana, & Wawrzyniak, 2005), which was shortened in line with previous research (Demerouti, Bakker, & Bulters, 2004). More specifically, WFC was assessed with three items (T1  $\alpha = .92$ , T2  $\alpha = .92$ ) (e.g., “How often does it happen that your work schedule makes it difficult for you to fulfill your domestic obligations?”) where responses were indicated on a 7-point scale ranging from 1 (*totally disagree*) to 7 (*totally agree*).

**Lack of psychological detachment.** Lack of psychological detachment was assessed with the scale developed by Sonnentag and Fritz (2007). This scale was introduced with the stem “In the evening, after work, and when I am on a weekend/vacation...”, and used four items (T1  $\alpha = .91$ , T2  $\alpha = .90$ ) to measure lack of psychological detachment (e.g., “I have a hard time distancing myself from work”). Responses were indicated on a 5-point scale ranging from 1 (*totally disagree*) to 5 (*totally agree*).

### Design

For this study, a two-wave longitudinal design was used to assess the relationships between workload, workaholism, WFC, and lack of psychological detachment. Data was collected at two time points over a three-month period.

### Procedure

An email was written by the researchers and forwarded through the present research’s sponsor to the heads of French healthcare centers two to four weeks before each data collection. This email explained the general purpose of the study and encouraged them to forward this information to all managers in their organization. This email explained that participation was voluntary and invited participants to complete an online questionnaire at two time points. Participants were assured that their responses were to be kept anonymous and that they were only required to indicate an identification code to allow researchers to match their responses at both data collections. According to local regulations, no formal ethical scrutiny was required as no ethics committee existed in the institution at the time of the study. However, managers were surveyed upon approval from their institution’s Committees for Health, Safety and Working Conditions and institutions’ executives signed a written consent form.

### Data Analysis

A series of models were tested through structural equation modeling using AMOS. To assess their goodness-of-fit, various fit indices were used: the Chi-square ( $\chi^2$ ), the degree of freedom ( $df$ ), the  $\chi^2/df$ , the Incremental Fit Index (IFI), the Comparative Fit Index (CFI), the

Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). Values greater than .90 for the IFI, CFI and TLI, and values below .08 for the RMSEA indicate a reasonable fit (Byrne, 2001). As for the  $\chi^2/df$ , even though there is no consensus on the acceptable ratio for this indice, recommendations indicate values ranging from 5.0 (Wheaton, Muthen, Alwin, & Summers, 1977) to 2.0 (Tabachnick & Fidell, 2007).

In all models, each latent variable had three to five indicators. The four items of the workload subscale were used as indicators of the *workload* latent variable. WE and WC were two independent latent variables with their five items as indicators, respectively. The three items of the WFC subscale were used as indicators of the *WFC* latent variable, and lack of psychological detachment was a latent variable with its four items as indicators.

To test our hypotheses, as suggested by recent studies (e.g., Trépanier, Fernet, & Austin, 2015; Carbonneau, Vallerand, Fernet, & Guay, 2008), we tested the proposed model (structural model 1, see Figure 1) and compared it to four other models (structural models 2-6) (i.e., stability model, reversed causation model, reciprocal model, alternative partial mediation model). In order to assess all of these models, we considered the aforementioned indices as well as the Akaike Information Criterion (AIC). The models providing the best fit are represented by the lowest values on this indice (Bozdogan & Ramirez, 1987). All models (structural models 1-6) were tested using an auto-regressive cross-lagged design (Bollen & Curran, 2004). More specifically, in these models (structural models 1-6), each latent variable at T1 was related with a unidirectional link to its corresponding variable at T2 (i.e., auto-regressive effects). Moreover, each indicator at T1 was allowed to covary with its corresponding indicator at T2, and all latent variables at T1 were connected together with covariances, as were all latent variables at T2.

Additionally, in order to rule out alternative explanations, we controlled for potentially predictive demographic variables. Indeed, results from preliminary analyses indicated that marital status was not significantly related to any of our study variables, yet they showed that age was significantly associated with T1 workload ( $r = .12, p < .05$ ) as well as T1 WC ( $r = -.15, p < .01$ ) and T2 WC ( $r = -.13, p < .05$ ). Similarly, with regards to gender, male had higher scores on T1 WE ( $M_{\text{male}} = 3.19, M_{\text{female}} = 3.01; t(387) = -2.80, p < .01$ ) and T2 WC ( $M_{\text{male}} = 2.37, M_{\text{female}} = 2.22; t(387) = -2.05, p < .05$ ). Additionally, job position was significantly associated with all study variables with the exception of T1 WC [ $F(4, 392) = 1.50, p = .20$ ] and T2 WC [ $F(4, 392) = 1.79, p = .13$ ]. Consequently, we controlled for age, gender, and job position in all models (M2-M6). More specifically, each of these control variables were allowed to covary with each other and were related, through direct paths, to each indicator they entertained significant relationships in preliminary analyses. These links were specified in all subsequent analyses.

In line with our hypotheses, we tested our proposed model (structural model 1) by including unidirectional paths between workload at T1 and WE and WC at T2. Unidirectional paths were also specified between WE at T1 and outcomes at T2 (i.e., T2 WFC and T2 lack of psychological detachment), as well as between WC at T1 and both outcomes at T2. We compared this proposed model with four competing models: a stability model (structural model 2), a reversed causation model (structural model 3), a reciprocity model (structural model 4), and an alternative partial mediation model (structural model 5). The stability model (structural model 2) only included unidirectional paths between each latent variable at T1 and its corresponding variable at T2 (i.e., no cross-lagged effects were specified). The reversed causation model (structural model 3) included unidirectional links between both T1 WE and WC and T2 workload. Two unidirectional paths were also specified between WFC at T1 and both WE and WC at T2, as well as between lack of psychological at T1 and both WE and WC at T2. The reciprocity model (structural model 4) was a combination of structural model 1 and structural model 3 as it assessed the mutual influence of latent variables over time. More

specifically, this model included bidirectional links between workload and both WE and WC, between WE and both WFC and lack of psychological detachment, and between WC and both outcomes. Finally, the alternative model (structural model 5) was tested to assess a potential partial mediation. It included unidirectional paths between workload at T1 and all other variables at T2 (i.e., T2 WE, T2 WC, T2 WFC, and T2 lack of psychological detachment). Unidirectional paths were also specified between workaholism dimensions (i.e., WE and WC) at T1 and outcomes at T2.

## Results

### Attrition Analyses

Descriptive analyses were conducted to compare participants who took part solely in the first data collection (i.e., T1) to those who completed the questionnaire at both time points (i.e., T1-T2). Managers who only took part in the T1 survey did not show significantly different scores from those who participated at both data collection times as far as age ( $M_{T1} = 46.93$ ,  $M_{T1-T2} = 48.12$ ;  $p = .69$ ), gender ( $\chi^2 = 1.17$ ;  $p = .28$ ), workload ( $M_{T1} = 5.26$ ,  $M_{T1-T2} = 5.25$ ;  $p = .82$ ), WE ( $M_{T1} = 3.13$ ,  $M_{T1-T2} = 3.13$ ;  $p = .91$ ), WC ( $M_{T1} = 2.34$ ,  $M_{T1-T2} = 2.31$ ;  $p = .51$ ), WFC ( $M_{T1} = 3.86$ ,  $M_{T1-T2} = 3.88$ ;  $p = .84$ ), and lack of psychological detachment ( $M_{T1} = 2.42$ ,  $M_{T1-T2} = 2.43$ ;  $p = .92$ ) were concerned. However, results indicated significant differences regarding marital status ( $\chi^2 = 335.57$ ;  $p < .001$ ) and job position ( $\chi^2 = 303.52$ ;  $p < .001$ ). More precisely, participants who completed the questionnaire at both time points were significantly more to hold a general management positions, or to manage administrative and medical or paramedical teams, whereas they were significantly less to manage social or technical teams than participants who solely took part in the first data collection. Similarly, those who participated at both T1 and T2 were significantly less likely to be single, divorced, or in a civil union, and were significantly more likely to be married or living with someone than those who only completed the questionnaire at T1.

### Correlations

Correlation analyses were first conducted and showed significant associations between T1 workload and respectively T2 WE, T2 WC, T2 WFC, and T2 lack of psychological detachment (see Table 1). Moreover, results showed significant correlations between T1 WE and respectively T2 WFC and T2 lack of psychological detachment, as well as between T1 WC and respectively T2 WFC, and T2 lack of psychological detachment.

Please insert Table 1 about here.

### Measurement Model Testing

First, three measurement models were tested. The first model (measurement model 1) consisted of all latent variables and indicators at T1, while the second model (measurement model 2) included all latent variables and indicators at T2. In each of these models, covariances were allowed among all latent variables. Both models presented satisfactory fit indices (see Table 2) and all indicators were significantly related to their corresponding latent variable ( $\beta$ s ranging from .52 to .94,  $p < .001$  at T1, and from .46 to .94,  $p < .001$  at T2). A third measurement model was tested (measurement model 3) by combining all latent variables and indicators at both measurement times, and consisted of ten latent variables (i.e., workload, WE, WC, WFC, and lack of psychological detachment, at T1 and T2) and 42 indicators. Following previous recommendations (Little, Preacher, Selig, & Card, 2007), in this model each indicator (i.e., item) at T1 was also allowed to covary with its corresponding indicator at T2. Results indicated that this model presented a satisfactory fit to the data (see Table 2).

Please insert Table 2 about here

### Structural Model Testing

As indicated in Table 2, our proposed model (structural model 1) presented satisfactory fit to the data and showed better indices than the stability model (structural model 2). Results from the reversed causation model (structural model 3) indicated that most

associations were non-significant ( $p > .05$ ), except for the links between T1 WE and T2 workload ( $\beta = .40, p < .01$ ) and between T1 WC and T2 workload ( $\beta = -.16, p < .05$ ). In addition, this model provided a worse fit than the proposed model (see Table 2). Regarding the reciprocity model (structural model 4), reversed links were not significant, with the exception of the links between T1 WE and T2 workload ( $\beta = .39, p < .01$ ) and between T1 WC and T2 workload ( $\beta = -.13, p < .05$ ). One should also note that in this model, the link between T1 workload and T2 WE was no longer significant ( $\beta = .14, p = .11$ ). However, this reciprocity model (structural model 4) presented worse fit indices than the proposed model (structural model 1) (see Table 2). Finally, our alternative partial mediation model (structural model 5) also showed worse fit indices than the proposed model, and the relationships in this alternative model were mostly non-significant.

Altogether, results indicated that the tested models (structural models 2-5) all provided worse fit indices than the proposed model (structural model 1). In the proposed model (structural model 1), each latent variable at T1 was significantly and positively related to its corresponding variable at T2 ( $\beta$ s ranging from .47 to .71,  $p < .001$ ), which suggested that the measured constructs were relatively stable over time. Even though the variance in latent variables at T2 was largely explained by the influence of their corresponding variables at T1, a significant part of variance was still explained by other constructs. Workload at T1 positively predicted WE ( $\beta = .16, p < .05$ ) but did not significantly predict WC ( $\beta = .005, p = .93$ ). Additionally, WE positively predicted both WFC ( $\beta = .27, p < .001$ ) and lack of psychological detachment ( $\beta = .22, p < .001$ ), while WC did not predict any significant changes in either WFC ( $\beta = .05, p = .34$ ) or lack of psychological detachment ( $\beta = .01, p = .88$ ) (see Figure 2).

Bootstrapping analyses were then conducted to confirm the mediating role of T2 WE in the relationship between T1 workload and both T2 WFC and T2 lack of psychological detachment. This method is recommended by scholars to confirm indirect effects (MacKinnon, Lockwood, & Williams, 2004; Preacher & Hayes, 2008). Indeed, authors argue that in finite samples, the total indirect effect is rarely normal and propose this problem to be addressed through bootstrapping methods. Indeed, “bootstrapping provides the most powerful and reasonable method of obtaining confidence limits for specific indirect effects under most conditions” (Preacher & Hayes, p. 886). Moreover, this method has largely been used in previous studies to confirm such mediational effects (e.g., Zhang, Walumbwa, Aryee, & Chen, 2013) including in two waves longitudinal designs as in the present study (e.g., Siltaloppi, Kinnunen, Feldt, & Tolvanen, 2012; Trépanier et al., 2015). The indirect effects were tested with 90% confidence intervals computed from 5000 bootstrap samples. Results indicated significant indirect effects of T1 workload on both T2 WFC ( $\beta = .397, CI = [.286-.527], p < .001$ ) and T2 lack of psychological detachment ( $\beta = .261, CI = [.124-.414], p < .01$ ), through T2 WE.

### Discussion

In the current research, we expected workload to positively predict supervisors' tendencies to work excessively (i.e., WE) and to work compulsively (i.e., WC) over time. In turn, we assumed that WE and WC would have independent and positive effects on both WFC and lack of psychological detachment. Altogether, results partially confirmed our hypotheses. WE significantly and fully mediated the effects of workload on both WFC and lack of psychological detachment. However, workload did not significantly predict WC, which, in turn, did not have significant effects on WFC and lack of psychological detachment.

#### Workload and Workaholism

Our research answers scholars' call to study the effects of work demands on workaholism in a longitudinal manner (Mäkikangas et al., 2013). More specifically, this paper adds up to the existing literature, which studied workaholism as a whole among

heterogeneous samples. Indeed, the current study explored how workload independently relates to each of the core components of workaholism (i.e., WE and WC) (Schaufeli et al., 2009b), in a specific sample made of French supervisors, over a three-month period of time. Our research confirmed that workload reinforces managers' tendency to work excessively hard and beyond what is reasonably expected from them (Schaufeli et al., 2008), as they try to align their behaviors with this organizational demand in an excessive manner. However, our results demonstrated that workload had no significant effect on the cognitive component of workaholism (i.e., WC). This finding suggests that environmental factors might not be the most appropriate to explain the development of WC. Instead, WC might vary more as a function of individual differences, which make workers more prone to have negative thoughts and obsessions. For instance, Clark et al. (2010) showed dispositional affect and perfectionism to be related to workaholism above and beyond other dimensions in a sample of working students with various occupations. Future studies could therefore investigate a combination of individual and organizational antecedents, and examine how these distinct determinants interact to predict WC and WE.

### **Workaholism, WFC, and Lack of Psychological Detachment**

Our research extends the literature on workaholism by looking into the distinct contributions of WE and WC on workers' impaired functioning. More precisely, even though scholars emphasized that it is the combination of both dimensions that matters in producing unfavorable outcomes (Schaufeli et al., 2009b), our results indicate otherwise. Indeed, the current study showed that WE positively predicted both WFC and lack of psychological detachment. However, no significant effects of WC were found on either of these outcomes. This suggests that it is the behavioral component of workaholism that matters in predicting impaired functioning outside the job. Indeed, the excessive amount of time and effort spent at work can no longer be devoted to personal activities (Edwards & Rothbard, 2000), therefore generating conflict between the work and family areas (i.e., WFC). Moreover, when managers work excessively, their psychological detachment is impeded as they have less time to mentally switch-off, and tend to engage in work-related activities once at home, which is incompatible with psychological detachment (Sonnetag & Bayer, 2005).

By emphasizing that WC does not significantly contribute to explain changes in WFC and lack of psychological detachment, our research surprisingly contrasts with the common observation that the cognitive component of workaholism is strongly associated with impaired well-being (Schaufeli et al., 2008, 2009b). It might be that WC, which is defined as a strong inner drive (Schaufeli et al., 2009b), is somehow internalized and integrated over-time and no longer obstructs supervisors' functioning outside of work in the form of WFC and lack of psychological detachment. Indeed, by taking in this cognitive component, and by "more fully transforming it into their own so that it will emanate from their sense of self" (Ryan & Deci, 2000, p. 60), supervisors might experience more adaptive functioning. In other words, it is possible that supervisors learn to apprehend this inner drive as part of their true self, and that they develop ways to progress along with it. Future studies could therefore go one step further by examining how an autonomous internalization of WC in the form of high harmonious passion (i.e., cognitions about work are experienced as volitional and pleasurable; Vallerand et al., 2003) might explain the absence of significant effects between WC and both WFC and lack of psychological detachment. Indeed, the absence of obligation underlying harmonious passion "enables [individuals] to detach themselves from work when necessary and enjoy other aspects of their lives" (Trépanier, Fernet, Austin, Forest, & Vallerand, 2014, p. 355). Conversely, if supervisors internalized WC in a controlled manner (e.g., resulting from internal pressure to boost self-esteem), in the form of obsessive passion, one might –unlike the current study– observe significant effects of WC on WFC and lack of psychological

detachment. Indeed, those who have an obsessive passion towards their jobs tend to be “consumed by their work and unable to disconnect from it” (Trépanier et al., 2014, p. 355).

### **The Mediating Role of Workaholism**

Even though the adverse effects of workload on WFC and lack of psychological detachment have been well documented in a broad range of occupations (e.g., Demerouti, Shimazu, Bakker, Shimada, & Kawakami, 2013; Sonnentag, Arbeus, Mahn, & Fritz, 2014), our research extends the literature on this topic by examining the mechanisms explaining this process. More specifically, we showed that it is because workload can trigger WE that it accentuates supervisors’ WFC and lack of psychological detachment. We therefore confirm previous research that found a conceptually close variable, which also refers to a behavioral tendency to excessively strive at work (i.e., overcommitment), to fully mediate the relationship between high workload and poor psychological detachment in a heterogeneous sample of Israeli employees (Potok & Littman-Ovadia, 2014). Indeed, workload has the power to push or enable supervisors’ tendencies to work excessively (i.e., WE), as they spend excessive energy to try to meet this demand. Moreover, WE yields to conflict between the work and the family domains, and impedes psychological detachment. As they try to align with this organizational demand in a malfunctioning way (i.e., WE), that is by spending an excessive amount of time and energy doing work-related activities, supervisors are therefore left with fewer resources to allot to their life outside their jobs.

### **Limitations**

Although our research contributes to a better understanding of how workaholism contributes to explain the longitudinal effects of workload on supervisors’ functioning outside their jobs, it still has some limitations. First, it should be considered that the cross-lagged analyses we conducted reflected two measurement times. Although this method offers advantages over the use of a cross-sectional method, resorting to three or four measurement times could allow for a better appreciation of the temporal relationships between the studied dimensions, as well as a more precise evaluation of the observed mediations (Cole & Maxwell, 2003). Indeed, our study did not offer three waves of data to allow for a more parsimonious test of our mediated model (i.e., independent variables at T1, mediating variables at T2, and dependent variables at T3). One should also note that results from our reverse and reciprocity models (i.e., structural models 4 and 5) indicate that workaholism increases perceived workload over time. These findings corroborate previous theoretical suggestions implying that workaholics might inflate their workload by making their task more complicated than necessary, and actively create more work for themselves by failing to delegate (Schaufeli et al., 2009b). It is therefore possible that a workaholic tendency might be more responsible for a higher workload than the opposite, and offering more waves of data collection would allow to further investigate the direction of causality between these dimensions.

Second, this study solely explored the longitudinal effects of workload on workaholism. Hence, future studies could investigate how other job demands (e.g., job insecurity, ambiguities about work) and resources (e.g., social support, task identity) might influence workaholism over-time, in order to identify those factors that facilitate versus prevent work addiction. Third, the current study only investigated how workload related to supervisors’ WFC and lack of psychological detachment over time. Yet, it would be interesting to assess how workload, through its influence on workaholic behaviors, might yield to negative organizational consequences (e.g., lower performance). For instance, by assessing objective indicators of performance, future studies could not only reduce self-report bias and common-method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) but also offer insight into the dangers for organizations to push or facilitate workaholism.

Fourth, it would be relevant to investigate whether one's workaholism can spread to their work team, as workaholics might set new standards of heavy work investment that others feel like they have to comply with (Snir & Harpaz, 2012). Research suggests that crossover can occur by means of transmission of demands and consequent strain across closely related individuals (Westman, 2001). Therefore, one could wonder if there is such a thing as workaholism contagion from supervisors to their coworkers or subordinates. This would confirm similar observations that were found in the teaching and army settings, and emphasized possible strain and burnout contagion (Bakker, Westman, & Schaufeli, 2007; Westman & Etzion, 1999). Finally, another limitation resides in our sample being made of supervisors with quite different positions. Even though workaholism appears to be an important issue for all white-collar employees (Kanai & Wakabayashi, 2001), it would be interesting to investigate whether supervisors' specialty could moderate the influence of workload on workaholism. For instance, future research could look into whether those who are holding the highest job positions, which come with greater responsibility, are more likely to develop workaholic behaviors than others.

### **Implications for Practice**

Altogether, our study points to some valuable practical implications, as it encourages to raise awareness about the dark side of heavy work investment. In other words, together with previous findings our results should contribute to a wake-up call for a society that values hard work in any form and with few limits. Organizations should indeed be warned about the detrimental effects workaholism can have on their supervisors and should be given tools to understand and detect such addictive behaviors, and to prevent them.

On an organizational level, preventive actions should be undertaken so that the organization does not facilitate, push, or reward addictive behaviors (Burke, 2001). Our study points to the necessity to carefully distribute workload and to make sure that such organizational demands do not get too high, for they would trigger workaholic behaviors and a chain of negative consequences for both individuals and organizations (Ferguson et al., 2016 ; Fritz et al., 2010). Instead, organizations should provide supervisors with job resources (e.g., communication, performance feedback), which have been shown to foster a positive form of heavy work investment that is work engagement (Shimazu & Schaufeli, 2009).

To take workaholism prevention one step further, organizations should encourage employees to lead balanced lives by stating clear organizational segmentation norms (Kreiner, Hollensbe, & Sheep, 2006). Indeed, based on social learning theory (Bandura, 1977), when employees perceive that their coworkers or supervisors clearly separate the work and the home domains, and that the boundaries between these areas are impermeable, they feel encouraged to leave their work-related activities and thoughts at the office. On the contrary, Park et al. (2011) showed in a heterogeneous sample of full-time workers that if their organization had low segmentation norms, employees were more likely to comply with such standards, which appear to set a fertile ground for workaholism. Therefore, as stated by Burke (2001, p. 643), it appears urgent that "workplace values encourage more balanced priorities and healthier lifestyles to support those workaholics [who] want to change their behaviors".

On an individual level, it is indeed important to offer curative actions to those employees who would be willing to tackle their workaholism. First, organizations should be advised on how to identify workaholic employees by observing their work habits (e.g., excessive hours spent at the office, late-night work-related emails). They could also use a dedicated scale to confirm their diagnosis of workaholic tendencies such as the cross-culturally valid one developed in Japanese and Dutch employees by Schaufeli et al. (2009b). Once spotted, workaholics should be offered counseling and helped to develop new habits to replace their old malfunctioning behaviors (Fassel & Schaef, 1989). More specifically, our study shows that the focus should be on adjusting managers' behavioral patterns (i.e., WE) as

this dimension of workaholism yields to maladaptive consequences in the form of WFC and low psychological detachment. Moreover, our results suggest that workaholics might also actively create more work for themselves, and may thus enter a vicious circle where their workaholism is encouraged by this increased workload. It therefore appears necessary to develop their self-management skills (e.g., mindfulness practice) and offer them with a more structured environment. For instance, organizations could offer supervisors with more structured work habits such as giving them tools to prioritize and delegate, providing them with specific work schedules including breaks and times they should leave the office, and making sure they take time off work long-and-frequently-enough.

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Table 1  
*Means, Standard Deviations, and Correlations between Latent Variables*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Workload (T1)	5.25	1.12	—									
2. WE (T1)	3.13	.58	.69	—								
3. WC (T1)	2.31	.67	.33	.52	—							
4. WFC (T1)	3.88	1.77	.55	.60	.43	—						
5. Lack of psychological detachment (T1)	2.43	1.02	.32	.39	.38	.54	—					
6. Workload (T2)	5.31	1.06	.68	.56	.25	.41	.22	—				
7. WE (T2)	3.11	.94	.62	.75	.45	.52	.34	.66	—			
8. WC (T2)	2.32	1.68	.27	.35	.68	.30	.25	.27	.48	—		
9. WFC (T2)	3.72	.58	.51	.55	.41	.66	.41	.58	.61	.40	—	
10. Lack of psychological detachment (T2)	2.38	.66	.32	.43	.37	.50	.62	.36	.46	.34	.52	—

*Note.*  $N = 393$ ; All associations are significant at  $p < .001$ . WE = Working Excessively; WC = Working Compulsively; WFC = Work-Family Conflict. WE and WC were measured on a 4-point scale, Workload and lack of psychological detachment were assessed using a 5-point scale, and WFC was measured on a 7-point scale.

Table 2  
Fit Indices for the Tested Models

Model description	$\chi^2$	<i>df</i>	$\chi^2/df$	IFI	TLI	CFI	RMSEA and 90% CI	AIC	Model comparison	$\Delta \chi^2$	$\Delta df$
Measurement models											
Measurement model 1 (T1 indicators)	482.45	173	2.79	.94	.92	.94	.068 (.060–.075)	—	—	—	—
Measurement model 2 (T2 indicators)	479.31	173	2.77	.94	.92	.94	.067 (.060–.074)	—	—	—	—
Measurement model 3 (T1 and T2 indicators)	1420.67	741	1.92	.94	.93	.94	.048 (.045–.052)	—	—	—	—
Structural models											
Structural model 1 (proposed model)	1627.79	868	1.88	.94	.93	.93	.047 (.044–.051)	1961.79	—	—	—
Structural model 2 (stability model)	1672.39	874	1.91	.93	.92	.93	.048 (.045–.052)	1994.37	1 vs. 2	44.60**	6
Structural model 3 (reversed causation model)	1662.43	868	1.92	.93	.92	.93	.048 (.045–.052)	1996.43	1 vs. 3	34.64**	1
Structural model 4 (reciprocity model)	1617.57	862	1.88	.94	.93	.94	.047 (.044–.051)	1963.57	1 vs. 4	10.22 n.s.	6
Structural model 5 (alternative model)	1623.86	866	1.88	.94	.93	.94	.047 (.044–.051)	1961.86	1 vs. 5	3.93 n.s.	2

Note.  $\chi^2$  = Chi-square; *df* = degree of freedom; IFI = Incremental Fit Index; TLI = Tucker-Lewis Fit Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; CI = confidence interval; AIC = Akaike Information Criterion;  $\Delta \chi^2$  = Chi-square difference;  $\Delta df$  = degree of freedom difference.

\*\* *p* < .001

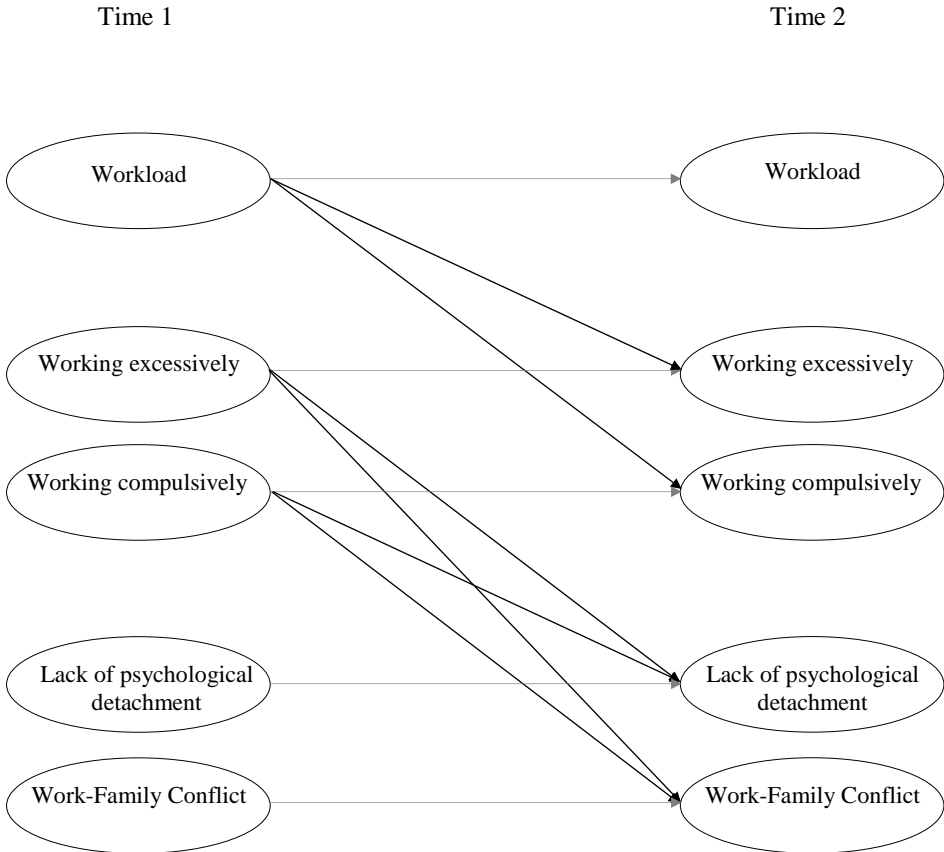


Figure 1. The proposed model.

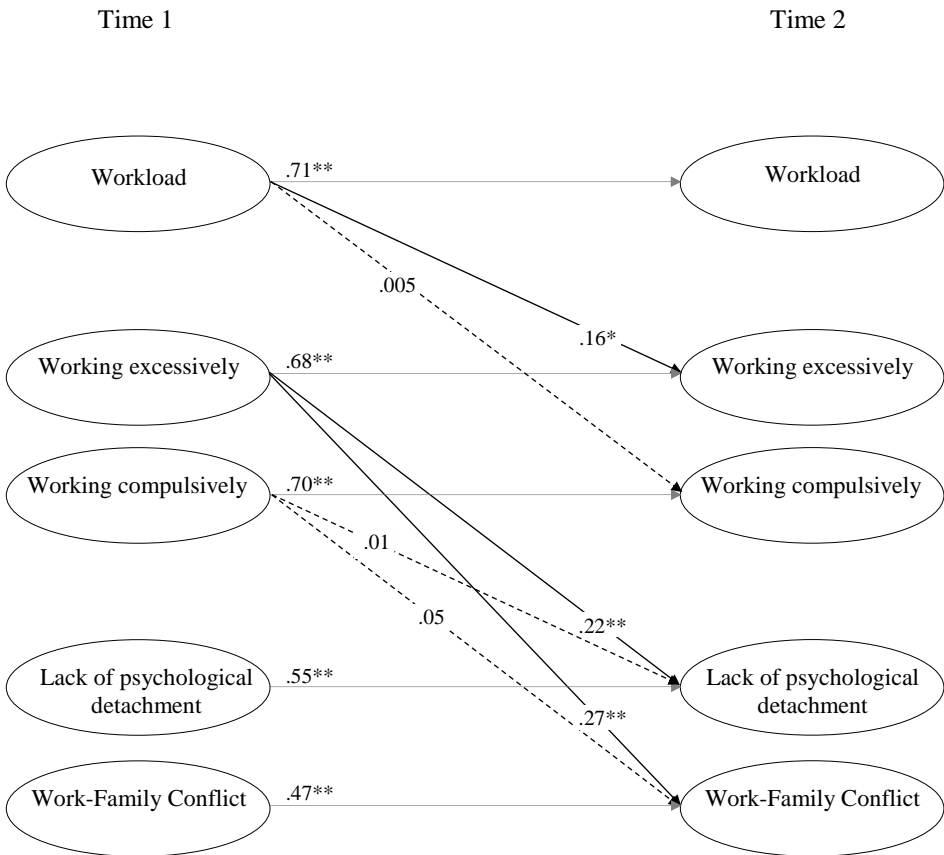


Figure 2. The final model.

For clarity purposes, covariances and links with controlled variables are not presented. Dashed lines indicate non-significant links.

\*  $p < .05$ , \*\*  $p < .001$ .