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Does workload moderate the association between perfectionism and workaholism?

A longitudinal study

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Abstract

The aim of this study is to examine, with a longitudinal design, the moderating role of workload in the relationship between perfectionism and workaholism. It was hypothesized that self-oriented perfectionism (SOP) and socially prescribed perfectionism (SPP) predict an increase in workaholism, and that workload may exacerbate this association. Four-hundred and thirty workers completed a self-report questionnaire at two different time points, and the hypothesized relationships were tested using structural equation modeling. Overall, SOP and SPP were not associated with workaholism over time. The interaction between SOP, but not SPP, and workload was significant. Self-oriented perfectionism predicted an increase in workaholism over time in workers facing high workload. Accordingly, SOP may be a risk factor for workaholism when workload is high.

Keywords: workaholism, self-oriented perfectionism, workload, moderation, longitudinal study

Does Workload Moderate the Association between Perfectionism and Workaholism? A Longitudinal Study

Workaholism is a widespread phenomenon with negative consequences for both individuals and organizations, in terms of physical and psychological symptoms, reduced job and life satisfaction, sleep problems, cardiovascular risk, inflammatory response, reduced job performance, as well as sickness absences and presenteeism (Clark, Michel, Zhdanova, Pui, & Baltes, 2016; Girardi et al., 2015; Girardi, De Carlo, Dal Corso, Andreassen, & Falco, 2019; Matsudaira et al., 2013; Salanova et al., 2016; Shimazu, Schaufeli, Kamiyama, & Kawakami, 2015). Therefore, in terms of prevention and treatment, it is important to investigate the antecedents of workaholism. In line with the biopsychosocial model (McMillan & O'Driscoll, 2008), in this longitudinal study we hypothesized that a specific personality disposition (i.e., perfectionism) may lead to an increase in workaholism over time, and that a situational factor (i.e., workload, a job demand) may moderate this longitudinal association, which is expected to be stronger when workload is high.

Theoretical Framework

Workaholism has been conceptualized in several different ways: as a stable behavior pattern (Scott, Moore, & Miceli, 1997), a personality trait (Clark, McEwen, Collard, & Hickok, 1993), or an addiction (Andreassen, 2014). Spence and Robbins (1992) suggested that real workaholics are highly involved in their work, feel compelled to work because of an inner pressure to do so, and have low work enjoyment, whereas enthusiastic workaholics are high in work involvement and drive to work, whilst experiencing also high work enjoyment. Conversely, Schaufeli, Taris, and Bakker (2008) argued that work enjoyment (whether high or low) should

not be conceived as a defining characteristic of workaholism, and that workaholism should be distinguished from work engagement.

Schaufeli et al. (2008, p. 204) defined workaholism as “the tendency to work excessively hard in a compulsive way”, thus identifying two central dimensions of the construct, namely working excessively (WE) and working compulsively (WC). Workaholism is characterized by the simultaneous presence of high levels of both WE and WC, which represent its behavioral and cognitive dimensions, respectively. Accordingly, workaholics devote an excessive amount of time to their work, beyond what is reasonably expected of them to comply with economic or organizational requirements, and are obsessed with it (Schaufeli et al., 2008).

Workaholism has been conceived as a specific subtype of heavy work investment (HWI) that primarily stems from predictors that are internal, rather than external, to the person (i.e., workaholics dedicate a lot of time and effort to their work because of an inner drive), with mainly negative consequences for the individual (Snir & Harpaz, 2012; see also Astakhova & Hogue, 2014). More recently, Schaufeli (2016) argued that organizations may unintentionally encourage heavy work investment in employees, so that both personality traits and organizational factors may play a role in the onset of HWI, including workaholism. In this study, in line with the biopsychosocial model (McMillan & O’Driscoll, 2008), we hypothesized the presence of an interaction between dispositional and situational factors. More specifically, we believe that organizational aspects that push employees to work hard (i.e., workload) may facilitate the onset of workaholism in workers with high levels of perfectionism, a personality characteristic considered to be a predisposing factor to workaholism (see also Liang & Chu, 2009).

The biopsychosocial model (McMillan & O’Driscoll, 2008), according to which human behavior results from the interplay between biological, psychological, and social factors, is the overarching framework according to which we hypothesized the existence of the above-mentioned pattern of relationships. In this perspective, workaholism has a multifactorial genesis and may stem from complex interactions between personal dispositions, behaviors learned by the individuals (e.g., in the family, at work), the cognitive processes employed, the emotions they feel, and the social systems in which they are embedded (e.g., the work context). Personal dispositions include personality traits, such as perfectionism, that may predispose individuals to workaholism. Workaholic behaviors may also develop through the observation of obsessive work behavior in significant others, such as parents (i.e., vicarious learning in the family), or because similar previous behaviors have been reinforced on the workplace (e.g., promotion, praise from supervisor). With respect to cognitive and emotional processes, workaholics spend considerable time on their work because they endorse rigid beliefs, such as performance-based self-esteem, and because they try to escape negative emotions by means of working (i.e., mood modification), respectively. Finally, organizational values, norms and reward systems may contribute to workaholism (see Andreassen, 2014, for a review). Hence, according to the biopsychosocial model, personality dispositions such as perfectionism (as well as family experiences) may predispose individuals to workaholism, which is triggered by work-related factors and then maintained by cognitive and behavioral dysfunctional patterns.

Perfectionism and Workaholism

In the literature, considerable attention has been devoted to several personality traits that may give rise to workaholism, including the Big Five personality traits (e.g., conscientiousness, neuroticism), Type A personality, narcissism, and perfectionism (Andreassen, 2014). In this

study, we focused on perfectionism because, in light of its core characteristics (e.g., striving for excessively high standards, fear of failure), it has long been considered to be closely related to workaholism (Scott et al. 1997; Spence & Robbins, 1992). Furthermore, perfectionism is one of the diagnostic criteria for obsessive-compulsive personality disorder (American Psychiatric Association, 2013), which is considered to be an antecedent of workaholism (Liang & Chu, 2009; Ng, Sorensen, & Feldman, 2007). However, empirical research on the relationship between perfectionism and workaholism is still scarce.

Perfectionism is a personality disposition that involves a striving for flawlessness and the setting of excessively high and often unrealistic standards of performance, accompanied by overly critical evaluations of one's own behaviour (Flett & Hewitt, 2002; Frost, Marten, Lahart, & Rosenblate, 1990). Several authors have conceptualized perfectionism as a multidimensional construct, with both personal and interpersonal aspects (Frost et al., 1990; Hewitt & Flett, 1991). The influential model proposed by Hewitt and Flett (1991), adopted in the present study, comprises three dimensions of perfectionism, namely self-oriented perfectionism (SOP), other-oriented perfectionism, and socially prescribed perfectionism (SPP). SOP is characterized by the inclination to set extremely high standards for oneself and an excessive motivation to attain perfection, whereas other-oriented perfectionism involves exceedingly high standards and unrealistic expectations for other people. Finally, SPP refers to beliefs that significant others hold unrealistically high standards and have high expectations for oneself (Flett & Hewitt, 2002; Hewitt & Flett, 1991).

Several studies have shown that facets of perfectionism taken from different theoretical models, including SOP and SPP, may reflect two higher-order underlying factors, namely perfectionistic strivings (PS) and perfectionistic concerns (PC), which are typically associated

with psychological adjustment and maladjustment (see Stoeber & Otto, 2006, for a review).

Overall, in this study we adopted the model proposed by Hewitt and Flett (1991) because it encompasses both interpersonal and intrapersonal aspects of perfectionism. Moreover, our focus was exclusively on SOP and SPP since they clearly reflect the two underlying factors of PS and PC, respectively. On the contrary, other-oriented perfectionism is directed to others, not the self, and is not considered a core dimension of perfectionism when conceptualizing perfectionistic strivings and concerns (Stoeber & Otto, 2006).

Previous theoretical research has suggested a central role of perfectionism in the development of workaholism (Loscalzo & Giannini, 2017; McMillan & O'Driscoll, 2008). In line with the biopsychosocial model, according to which cognitive, emotional, and behavioral factors may contribute to the onset and maintenance of workaholic behaviors, possible mechanisms that explain this association could include motivation and irrational beliefs at work.

With respect to motivation, van Beek, Hu, Schaufeli, Taris, and Schreurs (2012) found workaholism to be positively associated with two forms of extrinsic motivation, namely introjected and identified regulation. The former is a relatively controlled form of motivation in which behaviors are undertaken to attain ego enhancements or to avoid guilt or anxiety, whereas the latter is a more autonomous form of extrinsic motivation in which the individual recognizes the underlying value of a behavior and accepts it as his own (Ryan & Deci, 2000). Accordingly, van Beek et al. (2012) suggested that workaholics perform their work because of its instrumental value, that is, they work hard to avoid negative emotions (e.g., guilt, anxiety) and to improve feelings of self-worth and self-esteem (i.e., introjected regulation), as well as because they identify with the value of their work and recognize its importance for their career (i.e., identified regulation). Interestingly, previous research has shown that both perfectionistic strivings and

concerns are positively associated with introjected and identified regulation (although with some differences; Stoeber & Damian, 2016), whereas Stoeber, Davis, and Townley (2013) found that introjected and identified regulation mediated the association between SOP and workaholism.

Perfectionism is also associated with irrational beliefs (Flett, Hewitt, & Cheng, 2008), which, in turn, may lead to workaholism. Indeed, van Wijhe, Peeters, and Schaufeli (2013) identified four different kinds of work-related irrational beliefs (i.e., performance demands, coworkers' approval, failure, and control), and found that holding unrealistic high demands for oneself (i.e., performance demands) constituted a risk factor for workaholism. Furthermore, a recent study by Falco et al. (2017) highlighted how work-related irrational beliefs that reflect performance demands and failure (i.e., overestimating the meaning or consequences of negative events, awfulizing) mediated the association between perfectionism and workaholism.

We therefore hypothesized that perfectionism, in terms of both SOP and SPP, predicts an increase in workaholism over time.

H1a: SOP predicts an increase in workaholism over time;

H1b: SPP predicts an increase in workaholism over time.

The Moderating Role of Workload

In line with the biopsychosocial model (McMillan & O'Driscoll, 2008), we hypothesize that workload moderates the association between perfectionism and workaholism. There are several cognitive, emotional, and behavioral mechanisms that could underlie these associations. For example, chronic high workload signals the norms of an organization (i.e., to work exceedingly hard; Andreassen et al., 2017). These perceived external standards may be internalized and embraced as standards of self-worth and social approval by perfectionists, who base their self-esteem on their performance and achievements and consider work as a chance to

prove themselves (contingent self-worth; Egan & Shafran, 2018; Flett et al., 2008; van Wijhe et al., 2013). Therefore, perfectionists may rigidly persist in their work in order to attain ego enhancement (e.g., by meeting the internalized standards of social approval and self-worth) and recognition from their supervisor (e.g., by adhering to these social norms), even in presence of negative returns (van Wijhe, Peeters, & Schaufeli, 2014).

Similarly, individuals with high levels of perfectionism tend to endorse irrational beliefs about exceedingly high standards of performance and the consequences of failure, which have to be met to protect self-worth and avoid self-criticism and negative emotions such as shame and guilt (DiBartolo, Frost, Chang, LaSota, & Grills, 2004; Egan & Shafran, 2018). Hence, high workload may encourage workaholism in these individuals, who work hard as an attempt to avoid negative feelings about themselves and to escape uncomfortable stress (negative reinforcement; Andreassen et al., 2017; van Wijhe et al., 2014). Interestingly, this closely resembles mood modification, which is a core component of behavioral addiction (Andreassen, 2014).

Hence, we hypothesized that workload moderates the longitudinal association between perfectionism, in terms of both SOP and SPP, and workaholism, with this association being stronger for workers with higher workload.

H2a: Workload moderates the longitudinal association between SOP and workaholism, which is expected to be stronger when workload is high;

H2b: Workload moderates the longitudinal association between SPP and workaholism, which is expected to be stronger when workload is high.

These hypotheses are consistent with recent research by Girardi, Falco, De Carlo, Dal Corso, and Benevene (2018), who found in a cross-sectional study that workload exacerbates the

positive association between perfectionism (i.e., SOP and SPP) and workaholism. However, this longitudinal study has two main advantages over previous ones. First, it allows us to test whether perfectionism predicts an increase in workaholism over time, which is a relevant issue, given that different theoretical positions coexist in the literature. Certain previous research conceived perfectionism as a factor that may give rise to workaholism (i.e., an antecedent; Loscalzo & Giannini, 2017; McMillan & O’Driscoll, 2008). Some other studies conceptualized perfectionism as a characteristic of workaholism that reflects, together with the need for control and unwillingness to delegate, workaholics’ rigidity in thinking and inflexibility (Porter, 1996; Scott et al., 1997). In this perspective, perfectionism may be seen as a correlate rather than a predictor of workaholism. Hence, perfectionism should not be expected to lead to an increase in workaholism over time, although a longitudinal correlation between perfectionism and workaholism can be observed, given that they tend to co-occur in the same individual. However, previous empirical studies were mostly cross-sectional, and do not inform about the direction of the association. Second, this study also examined whether workload exacerbates the longitudinal association between perfectionism and workaholism. To the best of the authors’ knowledge, no previous empirical research has explored this possible pattern of relationships in a longitudinal study.

Method

Participants and Procedure

The present study was conducted on a sample of workers from different organizations in Italy. Participants were approached by trained research assistants and were invited to complete an anonymous questionnaire (paper-and-pencil) about their work experience at both Time 1 and Time 2 (i.e., three months later). Overall, 498 participants completed the questionnaire at Time 1

(T1), and 430 completed the questionnaire both at T1 and Time 2 (T2). There were no differences in demographics or study variables between participants who did and did not complete the T2 questionnaire (results not shown). Thirty-six participants had missing values in at least one of the variables considered in the study (103 missing values, 0.6%), and the missing data were handled with multiple imputation (Enders, 2010). Accordingly, the final sample was composed of 430 participants. This sample consisted of 251 women (58.4%) and 178 men (41.4%; one missing value, 0.2%) with a mean age of 42.4 ($SD = 12.1$). Concerning the type of job (i.e., intellectual or manual), 67.4% were freelancers, managers, or white-collar workers, whereas 29.8% were blue-collar workers (twelve missing values, 2.8%). Regarding the type of contract, 343 workers (79.8%) had a permanent contract, whereas 77 (17.9%) had a temporary contract (10 missing values, 2.3%). With respect to work experience, 46% had been with their current company for less than 10 years and 27.7% for more than 20 years (13 missing values, 3%). The questionnaire was administered anonymously, and participants took part in the study voluntarily.

Measures

The following self-report measures were administered:

Workaholism was determined both at T1 and T2 by using the Italian adaptation (Kravina, Falco, Girardi, & De Carlo, 2010) of the Dutch Work Addiction Scale (DUWAS; Schaufeli et al., 2008). The scale is composed of ten items, designed to detect WE (six items; e.g., “I seem to be in a hurry and racing against the clock”) and WC (four items; e.g., “I feel that there’s something inside me that drives me to work hard”). The six-point response scale ranged from 1 (*strongly disagree*) to 6 (*strongly agree*).

Workload (T1) was assessed using five items, reflecting both qualitative and quantitative workload, taken from the Q_u-Bo test, an instrument standardized for the Italian context (De Carlo, Falco, & Capozza, 2013). An example of an item is “Your job requires you to work very fast”. The six-point response scale ranged from 1 (*strongly disagree*) to 6 (*strongly agree*).

Perfectionism (T1) was determined using an Italian adaptation (Falco, Piccirelli, Girardi, Di Sipio, & De Carlo, 2014) of a short version of the Multidimensional Perfectionism Scale (Hewitt & Flett, 1991). The scale is composed of seven items and measures SOP (three items; e.g., “One of my goals is to be perfect in everything I do”), and SPP (four items; e.g., “Anything that I do that is less than excellent will be seen as poor work by those around me”). The seven-point response scale ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

Data Analysis

In the first phase of data analysis (i.e., imputation phase; Enders, 2010), 50 imputed data sets were created using the multivariate imputation by chained equations approach implemented in the mice package (van Buuren & Groothuis-Oudshoorn, 2011) for R software (R Core Team, 2018). Subsequently, data were analyzed (i.e., analysis phase) and then results were pooled (i.e., pooling phase) using the semTools package (Jorgensen, Pornprasertmanit, Schoemann, & Rosseel, 2018) for R.

Main analyses. To test the hypothesized relationships, two main models were estimated using moderated structural equation modeling (MSEM) with latent variables. The unconstrained approach was adopted (Marsh, Wen, Hau, & Nagengast, 2013). In Model 1 (M1) workaholism in T2 was regressed on workaholism, SOP, SPP, and workload in T1, as well as the latent interaction term between SOP and workload. Model 2 (M2) was identical to M1, except that the interaction between SPP and workload was entered. Given that workaholism is conceived in this

study as a set of two co-occurring characteristics (i.e., a syndrome; Schaufeli et al., 2008), in both M1 and M2 working excessively and working compulsively were used as observed indicators of latent variable workaholism, which accounts for the shared variance between WE and WC. For each independent variable, when more than three items were available, item parcels were created using the item-to-construct balance procedure and used as observed variables. To form multiple product indicators, the observed variables were centered, and then the cross-products of centered variables were computed using the matched-pair strategy (Marsh et al., 2013). The results of these models are described in the following Results section

Ancillary analyses. The main models described above were also estimated controlling for the effect of negative affectivity. Moreover, the two interaction effects were tested simultaneously in the same model, either not controlling or controlling for the effect of NA. These results are described in Electronic Supplementary Material (ESM) 1. Several confirmatory factor analysis (CFA) were also performed, to evaluate the psychometric properties of the instruments administered in T1 as well as to investigate the longitudinal measurement invariance of the DUWAS (Brown, 2015). These results are available in the ESM 2.

To evaluate the goodness-of-fit of the SEM models, the chi square test was used. Four additional fit indices were also considered: the root mean square error of approximation (RMSEA), the comparative fit index (CFI), the non-normed fit index (NNFI), and the standardized root mean squared residual (SRMR). Values close to or smaller than .08 for RMSEA and SRMR and values close to or greater than .90 for CFI and NNFI indicate acceptable model fit, whereas values close to .06 and .95 for RMSEA and CFI, respectively, indicate good fit (Brown, 2015; Enders, 2010).

Results

Descriptive statistics and correlations between study variables are reported in Table 1. Table 2 summarizes the fit indices of the main models, whereas the results of the MSEM are reported in Table 3. In M1 workaholism at T1 positively predicted workaholism at T2, unstandardized $\beta = 1.10$, $p < .001$, standardized $\beta = .71$, meaning that workaholism is relatively stable across waves. Conversely, SOP did not predict an increase in workaholism at T2, unstandardized $\beta = .07$, $p = .53$, standardized $\beta = .05$. In M2, only workaholism at T1 positively predicted workaholism at T2, unstandardized $\beta = 1.15$, $p < .001$, standardized $\beta = .75$, whereas SPP did not, unstandardized $\beta = .06$, $p = .45$, standardized $\beta = .04$. Overall, neither SOP nor SPP predicted an increase in workaholism over time, and H1 was not supported.

The interaction term between SOP and workload was significant in M1, unstandardized $\beta = .24$, $p < .01$, standardized $\beta = .16$. Simple slope analysis revealed that SOP predicted an increase in workaholism in workers facing high (+1 *SD*) workload, unstandardized $\beta = .31$, $p = .03$, standardized $\beta = .20$, but not in workers facing low (-1 *SD*) workload, unstandardized $\beta = -.17$, $p = .15$, standardized $\beta = -.11$. The interaction between SOP and workload is graphically represented in Figure 1. Finally, the interaction term between SPP and workload was not significant in M2, unstandardized $\beta = -.01$, $p = .93$, standardized $\beta = .00$. Overall, workload moderated the longitudinal association between SOP (but not SPP) and workaholism. Hypothesis 2a was supported whereas H2b was not.

Discussion

This longitudinal study investigated the association between perfectionism (i.e., a dispositional factor), workload (i.e., a situational factor), and workaholism over time. In line with the biopsychosocial model (McMillan & O'Driscoll, 2008), it was hypothesized that perfectionism predicts an increase in workaholism over time, with workload moderating this association, which is expected to be stronger when workload is high. Results showed that self-oriented perfectionism predicts an increase in workaholism over time only in individuals facing

high workload, whereas socially prescribed perfectionism does not predict an increase in workaholism, regardless of workload.

A possible explanation for this association pattern is that individuals with high levels of SOP, who base their self-worth on their performance, consider their work to be an opportunity to prove themselves, and persist in their work until they feel they have done enough to meet their internalized standards of performance (Falco et al., 2017; van Wijhe et al., 2014). These individuals, when working in a demanding environment, may feel compelled to dedicate themselves to their work to protect their self-worth and avoid negative feelings (Stoeber et al., 2013; van Beek et al., 2012). This, in turn, may lead to the onset of workaholism. Taken together, these results are consistent with the biopsychosocial model (McMillan & O'Driscoll, 2008), according to which workaholism can be conceived as the product of a complex interaction between biological, psychological, and social factors. In line with the model's prediction, our study showed that organizational factors that stimulate or compel employees to work hard (i.e., workload) may facilitate the onset of workaholism in individuals with high levels of perfectionism, a personality characteristic that may predispose individuals to workaholism.

These findings provide a valuable contribution to the existing literature on perfectionism and workaholism for several reasons. First, previous research has shown that overall perfectionism is positively associated with workaholism (Clark et al., 2016). Moreover, when possible differences between perfectionistic strivings and concerns were considered, SOP and SPP (as well as other facets reflecting PS and PC) were positively associated with workaholism (Falco et al., 2014, 2017; Stoeber et al., 2013). On the contrary, a different picture emerges from our study. Although bivariate correlations did show a positive association between both SOP and SPP at Time 1 and workaholism at Time 2, our study suggests that only the interaction between

SOP and workload contributes to the onset of workaholism over time. Second, SOP and other aspects of multidimensional perfectionism that reflect perfectionistic strivings are typically associated with psychological adjustment, whereas SPP, as well as other facets that reflect perfectionistic concerns, are usually associated with psychological maladjustment (Stoeber & Otto, 2006). However, our results showed that, only when workload is high, SOP may be a risk factor for workaholism, which in turn is mainly associated with negative outcomes for the individual. Conversely, SPP did not predict workaholism, irrespective of workload.

There are several possible explanations for these rather unexpected findings. From an empirical standpoint, it should be noted that, to the best of the authors' knowledge, this is the first study that investigated the moderating role of job demands, such as workload, on the association between perfectionism and workaholism over time. Indeed, most previous studies explored the association between perfectionism and workaholism using a cross-sectional design (Stoeber & Damian, 2016), and did not consider possible moderators affecting this association. An exception is the work by Girardi et al. (2018), who investigated in a cross-sectional study the moderating role of workload in the relationship between perfectionism and workaholism. However, the main advantage of the present study over that of Girardi et al. (2018) is that it examined whether perfectionism and workload separately and jointly predict an increase in workaholism over time (Little, 2013).

Moreover, from a theoretical standpoint, the association between SOP (but not SPP) and workaholism only when workload is high reflects the fact that workaholism is characterized by an intra-personal obsession with work (Schaufeli et al., 2008), which may arise in predisposed individuals who face high workload. With respect to the adaptiveness of SOP, Gaudreau, Franche, Kljajic, and Martinelli (2018) hypothesized an environmental influence on the

association between pure personal standards perfectionism (e.g., high SOP and low SPP, according to their theoretical model) and psychological adjustment. Specifically, in the presence of a supportive environment or in conditions of moderate levels of stress, pure personal standards perfectionism may be associated with better outcomes than non-perfectionism (e.g., low levels of SOP and SPP). However, in situations of high stress or in the presence of an adverse environment, pure personal standards perfectionism may instead be associated with worse outcomes. In other words, in line with the differential susceptibility hypothesis (Gaudreau et al., 2018), individuals with high SOP (and low SPP) may be more susceptible to environmental influences (both supportive and adverse) than those with low SOP (and low SPP). Moreover, individuals with high SOP and low SPP, when facing high levels of stress (e.g., high workload), may experience worse outcomes, such as workaholism.

Our study has some limitations. First, the three-months time-lag provided a relatively short time frame to test our hypotheses. It would be tempting to speculate that SOP positively predicted workaholism in our study only when workload was high (i.e., the most adverse condition, characterized by higher "internal" and "external" pressures) because of the relatively short time interval between measurements. However, the choice of a three-months time-lag is consistent with previous studies that investigated the association between personality dispositions and workaholism (e.g., Wojdylo, Karlsson, & Baumann, 2016), and was based on the assumption that stressful situations, including work-related ones, may lose their impact on individuals' health and well-being in three months or less (Diener, 2000; Huyghebaert et al., 2018). Overall, further longitudinal research is needed to replicate and extend the results of this study. Additionally, the reciprocal relationships between constructs, including the reversed effect of workaholism on perfectionism, were not considered in this study. However, this relationship

seems to be less plausible, given that perfectionism is a personality trait that originates early in childhood and adolescence (e.g., from the interaction with parents) and that is stable and relatively resistant to treatment (Shafran & Mansell, 2001).

In line with the biopsychosocial model, future studies could also further investigate the longitudinal relationship between other individual characteristics (e.g., positive/negative affectivity) and workaholism, as well as the possible moderating role of additional job demands (e.g., role conflict). Possible mediating variables (e.g., cognitive aspects of perfectionism) could also be considered. Moreover, future research could include objective measurements (e.g., biomarkers of stress; ten Brummelhuis, Rothbard, & Uhrich, 2017) or observer ratings (e.g., Falco et al., 2012; Mazzetti, Schaufeli, & Guglielmi, 2018) to assess workaholism.

Overall, the results of this study should encourage organizations to implement interventions aimed at preventing workaholism, especially among middle and top-level managers. Indeed, managers may play a central role in creating and maintaining an extended work hours culture, which, in turn, may encourage workaholism in subordinates (e.g., through vicarious learning; Kravina, Falco, De Carlo, Andreassen, & Pallesen, 2014). Individuals with high levels of SOP could be identified as potentially at risk of workaholism and included in specific training programs. However, perfectionists are relatively resistant to treatment. Hence, interventions should target (e.g., through cognitive-behavioral interventions) cognitive elements of perfectionism, such as irrational beliefs concerning performance demands and failure. Additionally, our study showed that workload may exacerbate the association between SOP and workaholism, and interventions could help individuals with high SOP to develop skills to cope effectively with high workload and time pressure (e.g., improving time management skills, enhancing problem-focused coping).

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Table 1

Means, Standard Deviations, and Correlations Between Study Variables (N = 430)

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Working excessively Time 2	3.42	1.11	-						
2. Working compulsively Time 2	3.80	1.27	.61***	-					
3. Working excessively Time 1	3.54	1.09	.71***	.41***	-				
4. Working compulsively Time 1	3.97	1.25	.46***	.53***	.54***	-			
5. Workload Time 1	4.40	0.94	.30***	.17***	.41***	.19***	-		
6. Self-oriented perfectionism Time 1	4.90	1.26	.33***	.33***	.35***	.48***	.29***	-	
7. Socially prescribed perfectionism Time 1	3.54	1.26	.22***	.24***	.22***	.27***	.16***	.42***	-

Note. Pooled estimates from multiple imputation (50 imputed data sets) are reported.*** $p < .001$.

Table 2

Comparative of Relative Fit for Models Tested (N = 430)

	<i>df</i>	χ^2	RMSEA	CFI	NNFI	SRMR
Self-oriented perfectionism (Model 1)	87	219.36	.059	.949	.930	.047
Socially prescribed perfectionism (Model 2)	87	220.83	.060	.948	.928	.046

Note. *df* = Degrees of freedom; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; NNFI = Non-Normed Fit Index; SRMR = Standardized Root Mean Square Residual.

Table 3

*Results from Structural Regression Models: Unstandardized and Standardized Regression**Coefficients (N = 430)*

Predictors (Time 1)	Model 1			Model 2		
	Unstandardized coefficient	Standard error	Standardized coefficient	Unstandardized coefficient	Standard error	Standardized coefficient
Workaholism	1.100***	.163	.710	1.154***	.166	.753
SOP	.071	.112	.046	.017	.113	.011
SPP	.047	.078	.030	.062	.082	.040
Workload	.006	.086	.004	-.061	.086	-.040
SOP x workload	.243**	.075	.157			
SPP x workload				-.007	.076	-.004
Total R^2	.584			.574		
Change in R^2	.010			.000		

Note. Pooled regression coefficients from multiple imputation (50 imputed data sets) are reported. Workaholism at Time 2 was the dependent variable in all the models tested. SOP = Self-oriented perfectionism; SPP = Socially prescribed perfectionism.

** $p < .01$. *** $p < .001$

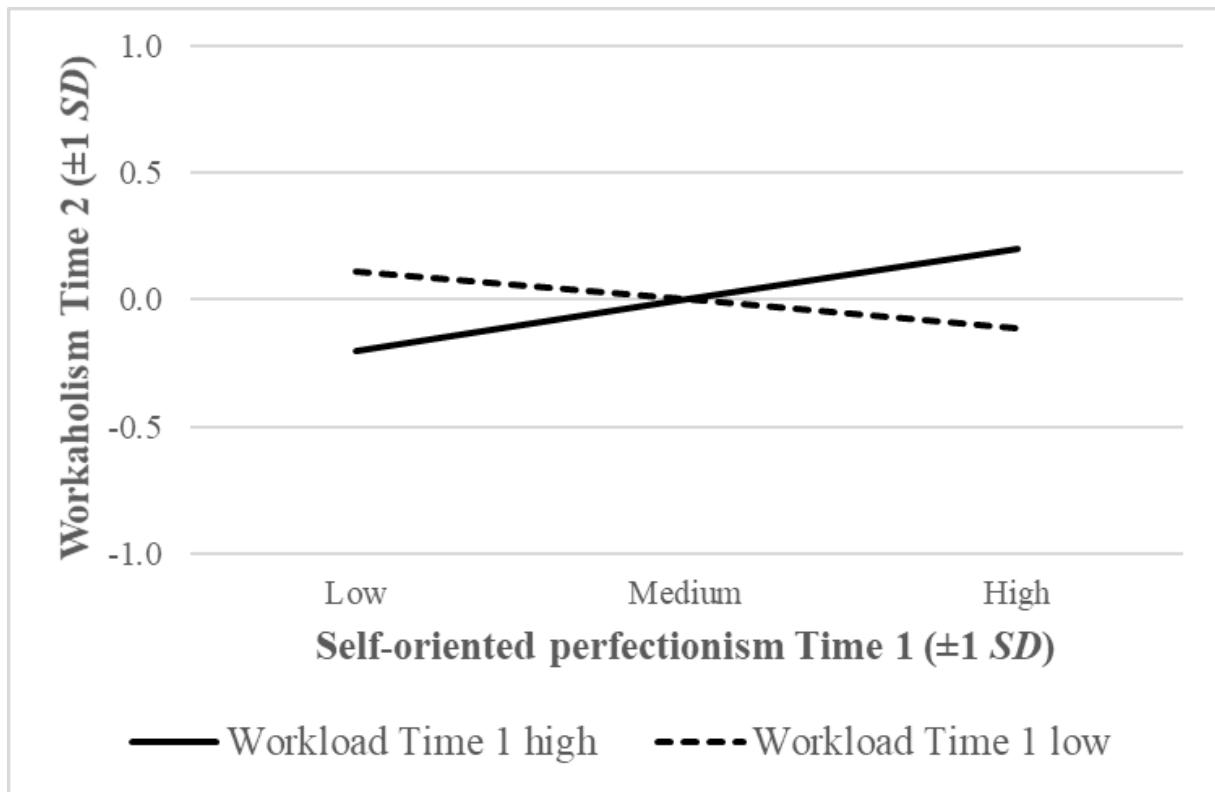


Figure 1. The interaction between self-oriented perfectionism and workload on workaholism.