

## Why do perfectionists have a higher burnout risk than others? The mediational effect of workaholism

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Previous research has revealed that perfectionists have a higher burnout risk than others, but the mechanisms accounting for this association have rarely been examined. The present study proposes that workaholism mediates this relation, as previous research revealed that (a) perfectionists are more likely to be workaholics than others, and (b) workaholics have a higher burnout risk than others. Using cross-sectional data from 199 Dutch managers, regression analyses revealed that holding high standards towards oneself (a self-directed indicator of perfectionism) was unrelated to any of the three dimensions of the Maslach Burnout Inventory. However, high concern over making mistakes in the face of others (representing socially prescribed perfectionism) was systematically associated with high levels of burnout and workaholism. Moreover, workaholism was positively associated with high levels of exhaustion. Subsequent mediation analysis revealed that the association between (the socially prescribed aspect of) perfectionism and burnout (emotional exhaustion) was mediated by workaholism.

*Key words:* burnout, workaholism, perfectionism, mediation analysis, managers

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Employee burnout is usually defined as a three-dimensional syndrome that is characterized by high levels of exhaustion (the feeling of being depleted of energy) and cynicism (a distant and negative attitude towards one's job), and low levels of professional efficacy (the idea that one is no longer effective in fulfilling one's job-related responsibilities, cf. Maslach, Leiter & Schaufeli, 2001). During the last three decades a significant body of research has examined the antecedents and correlates of burnout. Much of this research has addressed the situational (mainly work-related) antecedents of the syndrome, showing that the presence of high job demands and, to a somewhat lesser extent, the absence of job resources (such as job control and social support) are associated with a higher risk of burnout (e.g., De Lange, Taris, Kompier, Houtman & Bongers, 2003; Maslach et al., 2001; Schaufeli & Buunk, 2003, for overviews).

Interestingly, in spite of the fact that there are clear indications that workers differ in their disposition to experience burnout, comparatively little research has addressed the person-related antecedents of burnout. Apparently, especially high levels of neuroticism and low levels of extraversion are risk factors for burnout (cf. Bakker, Van der Zee, Lewig & Dollard, 2006; Ghorpade, Lackritz & Singh, 2007; Kokkinos, 2007; Langelaan, Bakker, Van Doornen & Schaufeli, 2006; Schaufeli & Enzmann, 1998). The present study focuses on *perfectionism* (a behavioral pattern strongly related to neuroticism, cf. Stoeber, Otto & Dalbert, 2009) as an antecedent of burnout. Whereas

perfectionism may loosely be defined as "the disposition to regard anything short of perfection as unacceptable" (cf. Stoeber et al., 2009), current research has progressed towards a multidimensional view of perfectionism. For example, Frost, Marten, Lahart and Rosenblate (1990) distinguished among no less than six dimensions of perfectionism, the most important being *setting high standards for oneself* and the level of *concern over making mistakes* in performance. They argued that whereas "normal" perfectionists would set high standards for themselves but would feel free to be less precise as the situation permits, neurotic perfectionists would not only set excessively high standards for themselves but also allow little latitude for making mistakes; thus, nothing is ever done well enough (p. 450). Although their terminology differs, Frost et al.'s (1990) reasoning meshes nicely with Hewitt and Flett's (1991, in press) distinction between *self-oriented* versus *socially prescribed perfectionism*. Self-oriented perfectionism refers to the belief that being perfect is important and is typified by setting extremely high standards for oneself. Conversely, socially prescribed perfectionism involves people's beliefs that others have high standards for oneself and that they will only be accepted by others if they fulfill these standards, i.e., does not make mistakes in meeting these standards.

The reasoning above suggests that perfectionism is associated with a higher burnout risk because a perfectionist behavioral pattern drains a person's mental energy. Previous research indeed reported positive associations between

(socially prescribed or maladaptive) perfectionism and burnout among athletes (e.g., Appleton, Hall & Hill, 2009; Chen, Kee, Chen & Tsai, 2008), students (Zhang, Gan & Cham, 2007), and teachers (Flett, Hewitt & Hallett, 1995; Stoeber & Rennert, 2008). The present study takes this research one step further by focusing on the *mechanisms* linking perfectionism to burnout. That is, perfectionism appears to be a risk factor for workaholism (i.e., the “compulsion or the uncontrollable need to work incessantly”, Oates, 1971, p. 1). In their overview paper, Scott, Moore and Miceli (1997) argued that perfectionism is a precursor of workaholism, which is consistent with Spence and Robbins’ (1992) early findings that workaholics show higher perfectionism and an unwillingness to delegate tasks to others (cf. Killinger, 2006). Moreover, workaholism may be a risk factor for burnout. For example, Scott et al. (1997) proposed that “... *perfectionist* workaholics experience greater susceptibility to stress and to physical and psychological problems [...] than do non-workaholic organization members” (p. 304, italics ours). This notion was confirmed by Taris, Schaufeli and Verhoeven (2005, Study 2) who found that workaholics obtained relatively unfavorable scores on strain (burnout) and mental health (as measured with the SCL-90, Derogatis, Rickels & Rock, 1976). Similar findings were reported by Buelens and Poelmans (2004), Burke and colleagues (Burke, 2000; Burke & Matthiesen, 2004), and Schaufeli, Taris and Van Rhenen (2007). Thus, it seems well possible that the association between perfectionism and burnout is at least partially due to the fact that perfectionists tend to be workaholics, whereas workaholism is usually associated with lower health and well-being.

The present study examines this reasoning in the context of a cross-sectional survey among 199 Dutch managers. By doing so we aim to extend current knowledge in at least three respects. First, by focusing on the associations among perfectionism, workaholism and burnout we enhance understanding of the etiology of burnout, especially regarding the role of personal characteristics. Second, by examining workaholism as a concept that mediates the association between perfectionism and burnout we aim to underline the important place of workaholism as an antecedent of or risk factor for employee well-being. Finally, by distinguishing between two dimensions of perfectionism (personal standards, representing the self-directed form of perfectionism and concern over mistakes, representing the socially prescribed form of perfectionism, cf. Stoeber & Rennert, 2008) we aim to provide a differentiated picture of the relations between perfectionism and well-being. The next section discusses our theoretical framework in more detail.

#### *Workaholism as a mediator of the relation between perfectionism and burnout*

The current study proposes that workaholism mediates the relation between perfectionism and burnout. In their synthesis of earlier theory and research on burnout, Scott et al. (1997) mentioned three features of workaholism. The first of these is that workaholics “. . . spend a great deal of time in work activities when given the discretion to do so, which results in their giving up important social, family or recreational activities because of work” (p. 292). This is consistent with Oates’ (1971) definition of workaholism, and also with notions that workaholics tend to allocate as much

time as possible to work – sometimes even creating more work for themselves than is necessary, just for the fun of working (e.g., Machlowitz, 1980). The second feature of their conceptualization is that workaholics persistently and frequently think about work when they are not at work. Workaholism is a “. . . reluctance to disengage from work that is evidenced by the tendency to [ . . . ] think about work in any circumstances” (McMillan, O’Driscoll, Marsh, & Brady, 2001, p. 89), suggesting that workaholics are to some degree obsessed with their work (Oates, 1971). The third element in Scott et al.’s (1997) definition is that workaholics work beyond what is reasonably expected to meet organizational or economic requirements. This is a specification of the first feature, in that it deals with the motivation for spending an excessive amount of time on work. Workaholics work harder than is required out of an *inner compulsion*, and not because of external factors.

This “inner compulsion” could well be the result of a high level of perfectionism (cf. Killinger, 2006; Scott et al., 1997; Spence & Robbins, 1992). As indicated above, perfectionism is not an unitary construct, but rather comprises the dimensions of setting high standards for oneself, as well as socially prescribed perfectionism (Hewitt & Flett, in press). It would seem likely that both forms of perfectionism will positively associate with workaholism. That is, both setting high standards for oneself and the belief that others will evaluate oneself against high standards, will be associated with a strong inner drive to spend much time and effort on work activities, a notion that was confirmed by Burke, Davis and Flett (2008) for a sample of professional and managerial workers.

Further, it is well-known that spending much time and effort on work increases the risk of adverse health and poor well-being, including burnout (e.g., De Lange et al., 2003; Maslach et al., 2001, for overviews). One interpretation of this association is that effort expenditure at work is associated with short-term physiological and psychological costs (Meijman & Mulder, 1998). Normally these costs are reversible, but if the possibilities for recovery are insufficient (e.g., due to long working hours), workers (not yet fully recovered from the previous work day) must invest additional (compensatory) effort to perform adequately during the next working period, resulting in an increased intensity of negative load reactions that appeal even stronger to the recovery process (Sonnetag & Zijlstra, 2006). Continuous or frequent exposure to high workload in combination with insufficient recovery may thus lead to an accumulation of negative load effects that may persist for a longer period of time (e.g., exhaustion, psychosomatic complaints, and lack of work engagement), eventually becoming irreversible and manifest (Taris et al., 2006).

#### *Study hypotheses*

Based on the findings discussed above, it seems plausible that high levels of perfectionism (both in terms of setting high standards for oneself as well as the socially prescribed type) will be associated with high levels of workaholism. Further, as workaholics will spend much time and effort on work activities, they may ultimately develop negative load effects, including high levels of burnout. In conjunction, this reasoning implies that the association between perfectionism and burnout is at least partly mediated by workaholism. Figure 1 presents an overview of the relations to be examined in the current study.

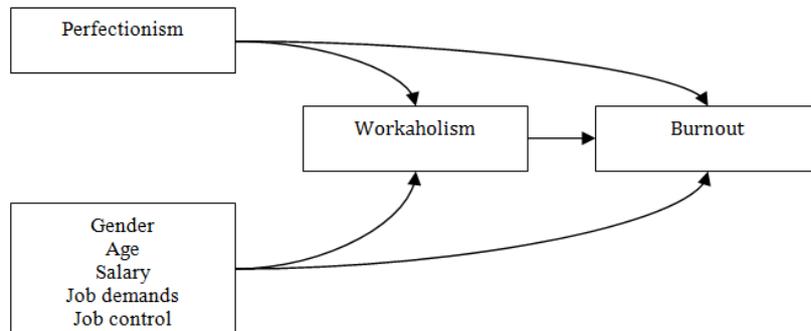


Figure 1. Heuristic model for the relations among background variables, perfectionism, workaholism and burnout

Based on the reasoning outlined above, we expect that high levels of concern over mistakes in the face of others (i.e., the socially prescribed type of perfectionism) result in higher levels of burnout (i.e., higher levels of emotional exhaustion and depersonalization, and lower levels of professional efficacy) (Hypothesis 1a). Similarly, holding high personal standards (the second dimension of perfectionism) should be associated with adverse scores on the three dimensions of burnout (Hypothesis 1b). Further, we expect that high levels of workaholism will be associated with adverse scores on the three dimensions of burnout (Hypothesis 2). Finally, we expect that the association between perfectionism and burnout will be mediated through workaholism. This implies that high scores on the two indicators of perfectionism are associated with high scores on workaholism (Hypothesis 3a), and that there is a significant *indirect* association between perfectionism and burnout (Hypothesis 3b).

## Method

### Participants

The sample consisted of higher staff of the head office of a large Dutch retail organization. In order to obtain an about equal distribution of males and females, a stratified sample was drawn. All females and half of the males in the six highest salary scales of the organization received a structured questionnaire addressing work characteristics, subjective well-being, and workaholism. After three weeks 199 completed questionnaires had been returned, yielding a 48.5% response rate. Slightly more than half of the sample (58.8%) was male;  $M_{age}$  39.6 years,  $SD = 8.3$ ; 90.4% held a college or an university degree; the average number of years employed by the organization was 10.4 years,  $SD = 8.8$ ; and 96.5% of the sample supervised on average 6.3 others,  $SD = 24.4$ .

### Measures

*Burnout* was measured using the Maslach Burnout Inventory-General Survey (MBI-GS, Schaufeli, Leiter, Maslach & Jackson, 1996). This measure construes burnout as a three-dimensional syndrome: emotional exhaustion (i.e., the feeling of being emotionally overextended and being depleted of energy), cynicism (referring to indifference or a distant attitude towards work) and reduced professional efficacy (referring to a decline of feelings of competence and successful achievement in one's work). *Emotional exhaustion* was measured with 5 items, such as "working all day really is a strain for me" (Cronbach's  $\alpha = .87$ ). Five items tapped

*cynicism*, including "I doubt the significance of my work" ( $\alpha = .73$ ). Finally, (lack of) *professional efficacy* was measured with 6 items, such as "I have accomplished many worthwhile things in this job" (reversed,  $\alpha = .71$ ). All items were answered using a 7-point Likert-type answering scale (0 = "never", 6 = "every day"). As previous research demonstrated that the meaning of these three dimensions is quite different (e.g., Taris, Schreurs & Schaufeli, 1999), it was decided to analyze these dimensions separately.

*Workaholism* was measured by the compulsive tendencies scale of Robinson's Work Addiction Risk Test (WART, 1999). This scale includes 9 items that address the degree to which participants work (overly) hard and have difficulties in relaxing after work, for example, "I feel guilty when I am not working on something" and "I find myself continuing to work after my coworkers have called it quits" (1 = "strongly disagree", 5 = "strongly agree",  $\alpha = .78$ ). Previous research (e.g., Flowers & Robinson, 2002; Taris, Schaufeli & Verhoeven, 2005) found that the validity of this scale was acceptable to good across a range of samples.

*Perfectionism* was measured using two dimensions of Frost et al.'s (1990) perfectionism scale. *Personal standards* were measured using seven items, such as "I expect higher performance in my daily tasks than most people" and "It is important to me that I be thoroughly competent in everything I do" (1 = "strongly disagree", 5 = "strongly agree",  $\alpha = .81$ ). *Concern over mistakes* was measured by nine items, including "People will probably think less of me if I make a mistake" and "The fewer mistakes I make, the more people will like me" (1 = "strongly disagree", 5 = "strongly agree",  $\alpha = .84$ ). These two dimensions constitute the core of the traditional conceptualization of perfectionism (Shafran & Mansell, 2001) and correspond strongly with Hewitt and Flett's (1991) dimensions of self-oriented and socially prescribed perfectionism, respectively.

*Control variables*. Finally, in the analyses we controlled for participant *age*, *gender*, *salary level* (6 categories), *job demands* and *job control*. The latter two concepts were measured using measures developed by Karasek (1985). Four items tapped job demands, including "My job requires that I work very fast" (1 = "never", 4 = "always";  $\alpha = .80$ ). Job control was measured with three items, such as "I have a lot of say about what happens at my job" (1 = "never", 4 = "always";  $\alpha = .69$ ).

### Statistical analysis

Table 1 presents the means, standard deviations and correlations for the study variables. To test Hypotheses 1a-

b (concerning the associations between the two indicators of perfectionism and the three burnout indicators) and 2 (referring to the associations between workaholism and the burnout indicators), three sets of hierarchical regression analyses were conducted. The first block of explanatory variables included the background variables, namely participant age, gender, salary level, job demands and job control (Model M<sub>1</sub>). In the second step (Model M<sub>2</sub>), both perfectionism dimensions were entered. Thus, M<sub>2</sub> examines the contribution of perfectionism in explaining the variance

in the outcome variables, beyond the effect of the background variables. For the three burnout dimensions a third block was then included (Model M<sub>3</sub>), including the measure of workaholism. This model thus examines the added value of workaholism in explaining burnout, net of the effects of perfectionism, job demands, control, and background variables. *R*-squared difference tests were conducted to evaluate whether a particular block accounted for an additional proportion of the variance in the criterion variable, relative to a model without this block of variables.

Table 1: Correlations, means and standard deviations for the study variables (N = 199)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Emotional exhaustion	1.00										
(2) Depersonalization	.53	1.00									
(3) Personal accomplishment	-.16	-.36	1.00								
(4) Workaholism	.44	.15	-.04	1.00							
(5) Perfectionism - Concern mistakes	.32	.23	-.22	.30	1.00						
(6) Perfectionism - Personal standards	.19	.14	-.07	.25	.53	1.00					
(7) Gender	.01	.03	-.13	.05	.16	.11	1.00				
(8) Age	-.08	-.00	.07	-.12	-.09	-.16	-.38	1.00			
(9) Salary level	-.07	-.16	.10	.14	-.02	.08	-.13	.27	1.00		
(10) Job demands	.33	.03	.05	.61	.14	.15	.00	.05	.14	1.00	
(11) Job control	-.22	-.30	.24	-.09	-.13	-.00	-.08	.17	.28	-.04	1.00
<i>M</i>	1.42	1.06	4.60	2.44	2.47	3.36	1.41	42.37	2.75	2.60	3.11
<i>SD</i>	1.06	1.11	0.95	0.50	0.80	0.60	0.49	8.32	1.49	0.56	0.43

Note. Correlations of .14 and over are significant at  $p < .05$ .

Relevant to Hypothesis 3, stating that the association between perfectionism and burnout would be mediated by workaholism, we first examined whether the two measures of perfectionism were related to workaholism (Hypothesis 3a). To test the mediation effect itself (Hypothesis 3b), we followed the logic outlined in Preacher and Hayes (2004). That is, rather than to focus on the strength of the association between perfectionism and burnout as proposed by Baron and Kenny (1986), we explicitly examined whether the indirect paths linking the indicators of perfectionism and burnout reach statistical significance (see also LeBreton, Wu & Bing, 2009). The significance of these indirect paths was tested using Sobel's (1982) test.

## Results

Table 2 presents the findings of the regression analyses. In all cases, the background variables (model M<sub>1</sub>) accounted for a significant proportion of the variance in the criterion variables. Moreover, inclusion of the two perfectionism dimensions (model M<sub>2</sub>) accounted in all cases for a significant additional proportion of the variance in the outcome variables. However, inclusion of workaholism (model M<sub>3</sub>) accounted only for an additional proportion of the variance in emotional exhaustion; it was irrelevant for the two other burnout indicators (depersonalization and personal accomplishment).

Table 2: R-squares and Standardized estimates (betas) of four hierarchical regression analyses

Model description	Burnout dimensions			
	Emotional exhaustion	Depersonalization	Personal accomplishment	Workaholism
<i>R</i> <sup>2</sup> (M <sub>1</sub> ) (background variables only)	.16	.11	.08	.40
<i>R</i> <sup>2</sup> (M <sub>2</sub> ) (M <sub>1</sub> + perfectionism)	.23 <sup>a</sup>	.17 <sup>a</sup>	.12 <sup>a</sup>	.44 <sup>a</sup>
<i>R</i> <sup>2</sup> (M <sub>3</sub> ) (M <sub>2</sub> + workaholism)	.31 <sup>b</sup>	.19	.14	
<i>Variables</i>				
Gender	-.09	-.04	-.10	-.01
Age	.00	.11	.00	-.10
Salary level	-.09	-.14	.00	.10
Job demands	.14	.01	.09	.56***
Job control	-.11	-.26***	.20**	-.05
Perfectionism - Concern mistakes	.20**	.19*	-.22**	.16*
Perfectionism - Personal standards	.01	.08	.02	.07
Workaholism	.36***			

Note. <sup>a</sup> Significant increase in *R*<sup>2</sup>, relative to Model M<sub>1</sub> (background variables only). <sup>b</sup> Significant increase in *R*<sup>2</sup>, relative to Model M<sub>2</sub> (background variables + perfectionism). \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

**Burnout.** As regards the three dimensions of burnout, we found that higher levels of job control were associated with favorable scores on depersonalization and personal accomplishment. The other background variables were irrelevant. Relevant to the hypotheses, we found that high scores on the Concern over mistakes-dimension of perfectionism was related to adverse scores on all three burnout

dimensions (i.e., emotional exhaustion, depersonalization, and professional efficacy; Hypothesis 1a supported). Conversely, the Personal standards dimension was unrelated to any of the burnout indicators (Hypothesis 1b not supported).

Concerning the effects of workaholism on the three burnout indicators, we found that only emotional

exhaustion was significantly associated with workaholism; participants with high scores on workaholism were indeed more likely to be emotionally exhausted (Hypothesis 2 partly supported).

*Mediation analysis.* If workaholism indeed mediates the relationship between perfectionism and burnout, there should be significant associations between (a) perfectionism and burnout; (b) perfectionism and workaholism; and (c) workaholism and burnout, controlling for perfectionism (cf. Baron & Kenny, 1986). Moreover (d), the mediation effect should be significant (Preacher & Hayes, 2004), as evidenced by the Sobel test (Sobel, 1982). Inspection of Tables 1-2 reveals that conditions (a)-(c) are only satisfied for the Concern over mistakes dimension (Hypothesis 3a partly supported), in combination with emotional exhaustion. Relevant to criterion (d), we computed the Sobel test statistic, yielding a value of 2.17,  $p < .05$  (two-tailed). Thus, the relationship between perfectionism (concern over mistakes) and burnout (emotional exhaustion) is indeed partly mediated by workaholism (Hypothesis 3b partly supported).

## Discussion

The present study focused on the mechanisms linking perfectionism with burnout. Previous research on various conceptualizations of perfectionism revealed that perfectionists are more vulnerable to burnout (Appleton et al., 2009; Chen et al., 2008; Flett et al., 1995; Stoeber & Rennert, 2008; Zhang et al., 2007), but research on the processes accounting for this relation is nonetheless sparse. Although workaholism has been related to both perfectionism (e.g., Burke et al., 2008; Killinger, 2006) and burnout (among others, Schaufeli et al., 2007; Taris et al., 2005), the plausible assumption that workaholism *mediates* the association between perfectionism and burnout had as yet not been tested. The present study supported this reasoning for one indicator of perfectionism: the effect of concern over mistakes (representing the socially prescribed form of workaholism) on emotional exhaustion (a key indicator of burnout) was indeed mediated through workaholism, presumably because workaholism leads to higher effort expenditure at work and, thus, to workaholism. Conversely, the other indicator of perfectionism (high personal standards) was unrelated to any of the three burnout indicators or to workaholism. This pattern of effects fits previous findings that especially the socially prescribed form of perfectionism is related to negative outcomes (e.g., Stoeber et al., 2009; Stoeber & Rennert, 2008), whereas setting high standards for oneself does not seem to be associated with negative outcomes.

One explanation for this finding is provided by self-discrepancy theory (Higgins, 1987). Basically, this theory proposes that people compare themselves to internalized standards or “selves”. As people may have different sets of standards, discrepancies between these selves may arise that result in the motivation to reduce these discrepancies and, if unsuccessful, stress and unwell-being will be induced. For example, people could compare their “actual self” (i.e., who they currently are and how they currently perform) to their “ideal self” (who they themselves ideally would like to be) or their “ought self” (who others feel they should be). This ideal self can be linked to the high personal standards-dimension of perfectionism (i.e., people decide for themselves how good they ideally would like to perform), whereas the socially prescribed form of

perfectionism is related to the ought self (representing the beliefs one has regarding others’ wishes concerning one’s performance). Clearly, if one is unsuccessful in bridging the gap between one’s actual and ideal self, it is quite possible to adjust one’s ideal self (e.g., to strive towards achieving less ambitious goals, cf. Carver & Scheier’s, 1998, control theory), meaning that not performing according to one’s ideal self does not necessarily result in adverse outcomes. However, it may be more difficult to adjust *others’* expectations of oneself. Thus, a difference between one’s actual and ought self cannot easily be resolved, meaning that such a discrepancy could well result in negative outcomes.

## Study limitations and future research

The three main limitations of the present study are the following. First, the hypotheses were tested using a cross-sectional data set. The limitations of such data with respect to establishing causality are well-known (e.g., Taris, 2000). Whereas perfectionism is usually considered a stable personality characteristic (cf. Frost et al., 1990), meaning that it is unlikely that the scores on our measures of this concept follow causally from workaholism or burnout, the causal direction of the association between emotional exhaustion and workaholism is unclear. Although previous research longitudinally established that high scores on workaholism preceded adverse scores on emotional exhaustion (Taris et al., 2005), we cannot exclude the possibility that exhausted workers tend to display workaholic behaviors in turn. For example, in an attempt to achieve acceptable results in spite of feeling exhausted, exhausted workers may work longer hours than non-exhausted workers. Indeed, this reasoning is consistent with effort-recovery theory (Meijman & Mulder, 1998; Taris et al., 2006), holding that fatigued workers must invest additional compensatory effort to perform adequately at work. This leads to the interesting proposition that whereas workaholism may result in higher levels of exhaustion, high exhaustion may also increase workaholic behaviors – a notion that can only be tested adequately using a longitudinal design.

Second, it is intriguing to see that whereas the concern over mistakes-dimension of perfectionism largely had the expected effects on the study variables, this was not the case for the “personal standards”. Although previous research revealed that the latter is not usually associated with adverse outcomes (Stoeber et al., 2009), it does not follow that holding high personal standards would be *unrelated* to the study variables. In this respect it is interesting to note that two of the correlations between holding high personal standards and the three burnout dimensions (i.e., emotional exhaustion and depersonalization) had not only the expected sign but were statistically significant as well (cf. Table 1). Thus, it would seem possible that the size of the present data set was simply too small to detect the – apparently relatively weak – effects of holding high standards on the other study variables. This reasoning calls for replication of the present study using a considerably larger sample.

Finally, the current data set was drawn from a very specific group of workers (well-paid managers, all working for the same organization). Although this particular group has frequently been assumed to be a high-risk group for workaholism (e.g., Brett & Stroh, 2003), it should be noted that the fact that *all* participants belonged to this high-risk

group could well have led to a restriction of the variance on the study variables. This implies that the current study has probably underestimated the magnitude of the associations among the variables, suggesting that the effects reported here have been estimated conservatively. Moreover, the unique nature of the present sample underlines the need to replicate the current findings on different (especially non-managerial) samples.

#### Practical implications

As for the practical implications of the present study, it is interesting to see that the effects of personal characteristics (i.e., workaholism and perfectionism - concern over mistakes) on burnout were about as strong or even stronger than that of often-studied concepts such as job demands and job control (cf. De Lange et al., 2003). Therefore, it would seem fair to say that the role of personal characteristics in the etiology of burnout has received less attention than would be warranted. Especially workaholism was a strong predictor of emotional

exhaustion, suggesting that the first concept may be a good starting point for individual and organizational-level interventions. Unfortunately, relatively little work has been done on the issue of the prevention of workaholism. Although several programs have been developed (see Seybold & Salomone, 1994; Van Wijhe, Peeters & Schaufeli, in press, for overviews), as yet the effectiveness of these interventions has not unequivocally been established. Clearly, more work is needed to extend our knowledge on the best approach of dealing with workaholism.

In conclusion, the present study provided evidence that the association between perfectionism and burnout is mediated by workaholism: perfectionists tend to be concerned over making mistakes in the face of others, which could lead to high effort expenditure to work (i.e., workaholism) and, in turn, high levels of emotional exhaustion/burnout. Given the magnitude of these associations, further research on the best approach to address perfectionism and workaholism seems imperative.

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