Unraveling the role of perfectionism in chronic fatigue syndrome: Is there a distinction between adaptive and maladaptive perfectionism? ☆

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ABSTRACT

In the current study, we investigated whether the distinction between adaptive (i.e. high personal standards) and maladaptive (i.e. concern over mistakes and doubt about actions) perfectionism that has been found in the literature, is also valid in patients with chronic fatigue syndrome (CFS). We hypothesized that maladaptive, but not adaptive, perfectionism would be significantly and positively related to severity of fatigue and depression in CFS. We examined this hypothesis in a sample of 192 CFS patients using structural equation modelling (SEM). Although the two perfectionism dimensions were related to each other, results supported a model in which only maladaptive perfectionism was positively related to severity of fatigue and depression. Further, we found that depression fully mediated the effect of maladaptive perfectionism on fatigue. The results suggest that adaptive and maladaptive perfectionism are two distinct, albeit related, dimensions in CFS. Findings of this study have important implications for theory and treatment of CFS, particularly for cognitive–behavioral treatment.

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1. Introduction

Chronic fatigue syndrome (CFS) is characterized by medically unexplained, severe and prolonged fatigue along with various other symptoms, such as muscle pain, sore throat, headaches, and post-exertional malaise (Fukuda et al., 1994). There is mounting evidence to suggest that CFS is associated with high rates of depression (Adler, 2004; Arnold, 2008; Fuller-Thomson and Nimigon, 2008; Kempke et al., 2010), and research increasingly indicates that both conditions share common biological and psychosocial factors (Luyten et al., 2006a; Arnold, 2008; Van Houdenhove et al., 2009). In particular, from a psychosocial perspective, both depression and CFS have been associated with perfectionism (Magnusson et al., 1996; White and Schweitzer, 2000; Shafran and Mansell, 2001; Luyten et al., 2006b; Deary and Chalder, 2010). For example, Magnusson et al. (1996), in a non-clinical sample, reported evidence for an association between fatigue and perfectionism. Other studies have found that patients with CFS exhibit higher levels of perfectionism as compared to a normal control group (White and Schweitzer, 2000; Deary and Chalder, 2010). Moreover, in one study CFS patients also retrospectively reported higher levels of perfectionism before onset of the disorder (Luyten et al., 2006b).

However, more research is needed to explore the precise nature of perfectionism in CFS (Van Geelen et al., 2007). In particular, it is unclear whether adaptive and maladaptive aspects of perfectionism can be distinguished in CFS (Luyten et al., 2006b). Indeed, studies using current multidimensional measures of perfectionism, like the Multidimensional Perfectionism Scale (MPS-F) developed by Frost et al. (1990), have found evidence for a distinction between adaptive or normal and maladaptive or pathological perfectionism (Dunkley et al., 2000; Enns et al., 2002; Bieling et al., 2004; Dunkley et al., 2006; Stoeber and Otto, 2006). Maladaptive perfectionism has been conceptualized as a tendency to make overly critical self-evaluations, whereas adaptive perfectionism has been defined as a positive striving for achievement (Frost et al., 1990; Dunkley et al., 2000, 2006; Stoeber and Otto, 2006). Many studies have confirmed this two-factor model of perfectionism, and have shown that adaptive perfectionism is either associated with positive health aspects (e.g., higher self-esteem) or unrelated to negative outcomes (Frost et al., 1990; Dunkley et al., 2000; Enns et al., 2002; Bieling et al., 2004; Dunkley et al., 2006; Stoeber and Otto, 2006), whereas maladaptive perfectionism has been implicated in the development and mainte-nance of a wide range of symptoms and disorders including depres-sion, anxiety disorders, and eating disorders (Shafran and Mansell, 2001). However, some studies have failed to replicate these findings, and have found that adaptive perfectionism is also associated with

negative consequences (e.g., distress), suggesting that adaptive perfectionism is not always 'really' adaptive (Shafran and Mansell, 2001; Luyten et al., 2006b).

To the best of our knowledge, only two previous studies have more systematically investigated the role of adaptive and maladaptive perfectionism in CFS. Luyten et al. (2006b), in a small study of 43 CFS patients, reported that neither adaptive nor maladaptive perfectionism, as assessed by the MPS-F (Frost et al., 1990), were associated with severity of fatigue. Furthermore, they found that both maladaptive and adaptive perfectionism were positively associated with severity of depression. The authors interpreted these results by suggesting that no clear distinction can be made between maladaptive and adaptive perfectionism in CFS patients. However, they also acknowledged the preliminary nature of these conclusions because of the small sample size of their study, the use of regression analyses instead of more sophisticated methods such as structural equation modelling, and because they did not directly investigate the factor structure of perfectionism. More recently, Deary and Chalder (2010), using the MPS-F (Frost et al., 1990), found that both perfectionism dimensions were related in CFS patients ($N = 27$), but not in normal controls ($N = 30$). Moreover, CFS patients reported higher levels of maladaptive, but not adaptive, perfectionism as compared with the control group.

The main aim of the current study was to further explore the nature of perfectionism in CFS. Therefore, we investigated whether adaptive and maladaptive perfectionism were differently associated with severity of fatigue and depression in a large group of CFS patients using structural equation modelling. Consistent with the theoretical distinction between adaptive and maladaptive perfectionism, we hypothesized that maladaptive, but not adaptive, perfectionism would be positively associated with severity of fatigue and depression in CFS.

2. Methods

2.1. Participants

Participants of this study were 212 consecutive patients meeting Centres for Disease Control (CDC) criteria for CFS (Fukuda et al., 1994) who were screened in the context of a multi-component treatment at the Chronic Fatigue Syndrome reference centre of the University Hospitals of Leuven, Belgium. Of the 212 participants, 20 (9.4%) failed to complete the study. The final sample consisted of 192 patients. The majority of participants were women (85.4%), and the average age of the sample was 40.17 years (S.D. = 9.43) with a range from 19–66 years. The mean level of education was 3.34 (S.D. = 1.01) on a 5-point scale (1 = primary school, 2 = lower secondary education, 3 = higher secondary education, 4 = undergraduate degree, 5 = university degree), meaning that on average participants had at least completed higher secondary school. Most of the participants were married or living together (70.8%). On average, participants reported having chronic fatigue symptoms for 4.78 years (S.D. = 2.89). Table 1 provides an overview of the descriptive statistics of the study sample.

2.2. Measurements

After signing an informed consent form, patients were asked to complete self-report measures of fatigue, depression, and perfectionism in the context of a broader screening procedure. All patients were assessed before treatment.

Table 1
Descriptive statistics of the study sample ($N = 192$).

Gender	Females	164 (85.4%)
	Males	28 (14.6%)
Age	M	40.17
	SD	9.43
Education	M	3.34
	SD	1.01
Civil status	Married/living together	131 (70.8%)
	Single	54 (29.2%)
Duration of CFS symptoms (in years)	M	4.78
	SD	2.89

2.2.1. Severity of fatigue

The Dutch version of the Checklist Individual Strength-20 (CIS-20; Vercoulen et al., 1994) was administered, which is a widely used self-report instrument to assess severity of fatigue. The CIS-20 consists of 20 items measuring four dimensions of fatigue: subjective experience of fatigue (SEF), reduced concentration (CON), reduced motivation (MOT), and reduced physical activity level (PA). A total score is calculated by summing the four subscales. Higher scores indicate higher levels of fatigue. The CIS-20 has good reliability and validity (Vercoulen et al., 1994). Estimates of internal consistency (Cronbach's α) were 0.79 for SEF, 0.89 for CON, 0.75 for MOT, 0.76 for PA and 0.85 for the total CIS-20 scale.

2.2.2. Severity of depression

The Dutch version of the Beck Depression Inventory (BDI) (Beck et al., 1961; Schotte et al., 1997) was used to assess severity of depression. The BDI is a 21-item self-report instrument which is well-documented in terms of reliability and validity (Schotte et al., 1997). As depression and fatigue show symptomatic overlap, we excluded items that refer to fatigue (# 15, 16 and 17) in the total BDI score (BDIc) (Luyten et al., 2006b). Higher scores indicate more severe depressive symptoms. The estimate of internal consistency (Cronbach's α) for the BDIc was 0.85.

2.2.3. Levels of perfectionism

Perfectionism was measured with the Dutch version of the Frost Multidimensional Perfectionism Scale (MPS-F) (Frost et al., 1990; Luyten et al., 2006b). The MPS-F is a 35-item self-report questionnaire consisting of six subscales, i.e. Personal Standards (PS), Concern over Mistakes (CM), Doubt about Actions (DA), Organisation (O), Parental Expectations (PE), and Parental Criticism (PC). Factor-analytic studies have shown that items from the CM and DA subscales load together on a maladaptive perfectionism factor ("maladaptive evaluation concerns"), whereas items from the PS subscale load together on a factor termed as adaptive perfectionism referring to more positive strivings associated with perfectionism (Dunkley et al., 2000, 2006; Stoeber and Otto, 2006). Therefore, the PS subscale (e.g., "I have extremely high goals") was used to measure adaptive perfectionism, whereas maladaptive perfectionism was assessed with the CM (e.g., "I should be upset if I make a mistake") and DA (e.g., "I usually have doubts about the simple everyday things I do") subscales. Higher scores indicate higher levels of Doubt about Actions, Concern over Mistakes and Personal Standards, respectively. Estimates of internal consistency (Cronbach's α) were 0.94 for CM, 0.77 for DA and 0.85 for PS.

2.3. Data analysis strategies

First, zero-order correlations were calculated between levels of fatigue, depression, and perfectionism. Next, a two-step procedure was used to test the study's hypotheses following the recommendations of Anderson and Gerbing (1988). First, we evaluated the measurement models using Confirmatory Factor Analysis (CFA). In particular, four confirmatory factor analyses (CFA's) were tested to select the measurement models. The four subscales of the CIS-20 (SEF, CON, MOT, PA) were used as indicators of a latent fatigue construct. The BDIc scores were used to create a latent depression construct. In particular, items of the BDIc were allocated consecutively into three parcels (BCIc1, BDIc2, BDIc3). The technique of parceling is widely adopted, as it has several methodological advantages over the use of individual items. For example, parcels have stronger relationships with the latent variable and are less affected by method effects (Marsh et al., 1998). Furthermore, the CM and DA subscales of the MPS-F were used to create a latent construct of maladaptive perfectionism (MAL), and the PS subscale was used to model a latent construct of adaptive perfectionism (ADAP). More concretely, items of each subscale were grouped consecutively into three parcels (CM1, CM2, CM3, DA1, DA2, DA3, PS1, PS2, PS3).

Second, we tested the structural model, i.e. the relationship between adaptive and maladaptive perfectionism on the one hand, and severity of fatigue and depression on the other. In particular, we compared two theoretical models that were derived from our review of the literature, (a) a model including paths from both maladaptive and adaptive perfectionism to severity of fatigue and depression, and (b) a model which only included paths from maladaptive perfectionism to severity of fatigue and depression. Standardized path coefficients were calculated, and three indices were used to assess the goodness of fit following the guidelines specified by Hu and Bentler (1999): (1) the comparative fit index (CFI), (2) the root-mean-square error of approximation (RMSEA) and the (3) standardized root-mean-square residual (SRMR). A good model fit is indicated by CFI values of 0.95 or greater, RMSEA values of 0.06 or less and SRMR values of 0.08 or less. Analyses were conducted using Lisrel 8.7 (Jöreskog and Sörbom, 1996).

3. Results

3.1. Zero-order correlations

Zero-order correlations between dimensions of perfectionism, fatigue, and depression are presented in Table 2. First, results showed a highly significant positive relationship between fatigue and depression ($r = 0.459$, $P < 0.001$). Second, the maladaptive perfectionism