Personality and chronic fatigue syndrome: The role of the five-factor model ☆

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ABSTRACT

The aim of this study was to examine the relationships between personality factors and the symptomatology of fatigue among people with chronic fatigue syndrome (CFS), and compare them to people from the general population. Seventy-seven CFS patients (47 women, 30 men) were compared with 72 healthy individuals (44 women, 28 men) to investigate whether personality factors are related to the symptomatology of fatigue. All participants were asked to complete the NEO Five Factor Inventory (NEO-FFI), the Modified Fatigue Impact Scale (MFIS), the Fatigue Severity Scale (FSC), and the Mental Health Inventory (MHI). The results revealed that the CFS group reported higher levels of neuroticism and conscientiousness than the control group. These two personality factors were significantly related to fatigue symptoms, impact, and severity in both groups. These findings suggest that personality factors of neuroticism and conscientiousness may play an important role in the development and perpetuation of fatigue symptoms.

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1. Introduction

Chronic fatigue syndrome (CFS) is characterized by several disabling medically unexplained mental and physical fatigue of at least 6 months duration, accompanied by a number of additional nonspecific symptoms, including muscle pain, sleep disturbances, depression and impaired concentration (Fukuda et al., 1994). Studies on CFS have suggested several etiological factors, including active viral infection, immune dysfunction, dysfunctions in neuroendocrine system, psychiatric disorders, neuropsychological deficits, and impaired cognitive functioning. However, there is no consistent evidence for any of these explanations (see Van Geelen et al., 2007).

The evidence in support of psychological nature of the illness is also convincing (Henderson and Tannock, 2004; Moss-Morris, 1997; Taillefer et al., 2003; Van Geelen et al., 2007; White and Schweitzer, 2000). Some researchers have shown that personality characteristics may play a predisposing or perpetuating role in CFS (see Van Geelen et al., 2007; Henderson and Tannock, 2004). Powell et al. (1990) found that CFS subjects have a tendency to minimize psychological contributions to their illness and to use a depressive attribution style or learned helplessness. A tendency to view the causes for bad events as external, stable, and global was found as a typical feature within the CFS subjects (Chubb et al., 1999). Alexithymia characteristics such as marked externalization,

difficulty identifying and describing feelings, and difficulty distinguishing emotions from bodily sensations are also associated with CFS (Friedberg and Quick, 2007). Patients with CFS were also found to have a maladaptive perfectionistic personality style (White and Schweitzer, 2000) and to be more action-prone (Van Houdenhove et al., 1995, 2001). However, in contrast to these findings some researchers did not find higher maladaptive perfectionism in patients than in controls (Blenkiron et al., 1999; Wood and Wessely, 1999). Van Houdenhove et al. (2001) also failed to prove the role of an idealistic appraisal of the premorbid self in CFS.

Further studies have tried to examine the role of personality in CFS within the frameworks of personality dimensions and personality disorders. In the first study on personality disorders and CFS, Millon et al. (1989) using the Millon Clinical Multiaxial Inventory (MCMI), found that CFS patients met criteria for a variety of personality pathology including histrionic (33%), schizoid (29%), and avoidant, narcissistic and aggressive/sadistic (25% each) compared with normative data. Ciccone et al. (2003) and Henderson and Tannock (2004) also found a high level of personality disorders in patients with CFS. Similarly, other studies using the Minnesota Multiphasic Personality Inventory (MMPI) showed that CFS patients scored higher on most scales than patients and normal control groups (Pepper et al., 1993; Schmaling and Jones, 1996; Stricklin et al., 1990). Adopting a categorical approach to personality assessment with CFS patients, Pepper et al. (1993) showed that the most common personality disorders (PDs) among the CFS patients were obsessive–compulsive (16%), histrionic (13%), and dependent (11%), while Johnson et al. (1996) reported the most common PDs of the CFS patients as

histrionic (23%) and borderline (17%). Although these findings give some support for the higher rate of personality disorders in patients with CFS than in general populations, a recent study by Courjaret et al. (2009) failed to prove any significant difference in personality disorders between CFS and general populations. Further methodological limitations regarding the study of personality disorders in patients with CFS are discussed in Van Geelen et al. (2007). Therefore, the generalizability of these findings can be questioned.

Preliminary evidence on personality dimensions in patients with CFS is limited to neuroticism and extraversion. While most empirical evidence shows an increased level of neuroticism in patients with CFS (Blakeley et al., 1991; Buckley et al., 1999; Johnson et al., 1996; Taillefer et al., 2003), findings regarding extraversion in this group of patients are less definitive. For example, while Buckley et al. (1999) found that patients with CFS scored lower extraversion than healthy individuals, Chubb et al. (1999) found the scores on extraversion of their CFS group not to be significantly different from those of their healthy control group. Further studies are obviously needed to clarify the possible relationships between personality characteristics and CFS.

McCrae and Costa (1987) conceptualized personality along five broad dimensions, including neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Neuroticism refers to a tendency to experience anxiety, tension, self-pity, hostility, impulsivity, self-consciousness, irrational thinking, depression, and low self-esteem (John, 1989; McCrae and Costa, 1987; McCrae and John, 1992). Extraversion refers to a tendency to be positive, assertive, energetic, social, talkative, and warm (John, 1989; McCrae and John, 1992; Watson and Clark, 1997). Openness refers to a tendency to be curious, artistic, insightful, flexible, intellectual, and original (John, 1989; McCrae and Costa, 1987; McCrae and John, 1992). Agreeableness refers to the tendency to be forgiving, kind, generous, trusting, sympathetic, compliant, altruistic, and trustworthy (John, 1989; McCrae and John, 1992). Finally, conscientiousness refers to a tendency to be organized, efficient, reliable, self-disciplined, achievement-oriented, rational, and deliberate (John, 1989; McCrae and John, 1992).

Although the relationship between personality and CFS is becoming clearer, relatively little is known about how personality dimensions are related to CFS. Therefore, the objective of the present study was to test whether specific dimensions of personality, those of the five factor model, are differentially related to CFS. Literature reviews have suggested the five-factor model (FFM) of personality as a useful heuristic framework relevant to the description and understanding of specific vulnerability styles (e.g., Costa and Widiger, 2002). Based on the previous findings, it was predicted that CFS would be positively related to neuroticism and conscientiousness. Further the association of personality dimensions and fatigue symptoms was compared between CFS patients and a control group of care-seeking sample without CFS in the present study.

2. Method

2.1. Participants

The participants were 77 patients with CFS (47 women, mean age = 31.4 years, SD = 7.41, and 30 men, mean age = 34.9 years, SD = 8.22) referred to Tehran University Clinic, and 72 volunteers (44 women, mean age = 33.2 years, SD = 8.54, and 28 men, mean age = 37.00 years, SD = 9.63) drawn from comparable care-seeking individuals without CFS. Age of participants in each group ranged from 22 to 60 years. Participants were primarily drawn from the middle socioeconomic classes. There were no significant differences between the groups in terms of age, gender or socioeconomic

Table 1
Demographic and clinical characteristics.

Variable	CFS group (n = 77)		Control group (N = 72)		
	M(SD)	F(%)	M(SD)	F(%)	P
Age[a]	32.51(8.02)		34.75(9.12)		NS
Education (year)[a]	12.31(2.34)		13.00(2.69)		NS
Sex[b]					
Male		30(39)		29(40.3)	NS
Female		47(61)		43(59.7)	
Marital status[b]					
Married		29(37.7)		32(44.4)	NS
Single		34(44.2)		31(43.1)	
Divorced		14(18.2)		9(12.5)	
Occupational status[b]					
Employed		24(31.2)		24(33.3)	NS
Unemployed		27(35.1)		22(30.6)	
Housewife		22(28.6)		19(26.4)	
Retired		2(2.6)		4(5.6)	
Student		2(2.6)		3(4.2)	
Duration of illness	5.11(3.25)				
PWB[a]	33.07(8.66)		53.55(8.96)		S
PD[a]	48.72(10.82)		30.48(8.60)		S

[a] Independent group t-test; PWB = Psychological Well-Being; PD = Psychological Distress; NS = not significant; S = significant ($P < 0.001$).
[b] Chi-square.

class. Demographic information is presented in Table 1. Group (CFS vs. Control) differences on demographic factors were not significant by independent t and chi-square tests. Results of independent t-test revealed significant differences between the CFS group and the control group on Mental Health Inventory (MHI; Veit and Ware, 1983) subscales Psychological Well-Being and Psychological Distress. These results meet the inclusion criteria for both groups (see Table 1). The protocol was approved by the Department of Psychology, University of Tehran. All participants signed an informed consent document prior to performing the research procedure.

2.2. Procedure

Patients were included in this study if they fulfilled the CDC criteria (Fukuda et al., 1994) for the diagnosis of CFS. Participants with CFS were administered the present tests in regular sessions at the Tehran University Clinic by a research assistant trained in this experimental procedure. Tests administered to the CFS group consisted of a locally developed Sociodemographic Questionnaire. The Sociodemographic Questionnaire contained questions regarding demographic information, CFS course, current medications, and psychiatric history. Specific information obtained through this questionnaire was then used as a basis for exclusion from the present study. Exclusion criteria for both clinical and control groups were (a) having no significant health problems other than CFS and psychological distress (symptoms of depression and anxiety measured by the MHI) for the clinical group, (b) prior psychiatric treatment, and (c) drug or alcohol history. Participants of both CFS and control groups were asked to complete the NEO Five Factor Inventory (NEO-FFI), the Modified Fatigue Impact Scale (MFIS), the Fatigue Severity Scale (FSS), and the Mental Health Inventory (MHI).

2.3. Instruments

NEO Five Factor Inventory (NEO-FFI; Costa and McCrae, 1992). The NEO-FFI is a 60-item self-report measure of five-factor model of personality. It consists of five 12-item scales measuring neuroticism, extraversion, openness, agreeableness, and conscientiousness. Respondents rate each item on a five-point scale from 1 "strongly disagree" to 5 "strongly agree." The NEO-FFI has been