

Metacognitions and negative emotions as predictors of symptom severity in chronic fatigue syndrome

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Abstract

Objective: Chronic fatigue syndrome (CFS) describes a condition that is primarily characterized by fatigue and flu-like symptoms that are not alleviated by rest. This study investigated the relationship among metacognitions, negative emotions, and symptom severity in CFS. **Methods:** A total of 96 patients who had received a diagnosis of CFS according to the Oxford Criteria completed a battery of self-report measures that consisted of the Depression Anxiety Stress Scales, the 30-Item Metacognitions Questionnaire, the Chalder Fatigue Questionnaire (CFQ), and the RAND 36-Item Short-Form Health Survey-Physical Functioning. **Results:** Correlation analyses showed that negative emotions and metacognitions

were positively correlated with measures of symptom severity and that metacognitions were a better predictor of symptom severity than anxiety and depression. Hierarchical regression analyses indicated that (1) lack of cognitive confidence predicted both mental and physical factors of the CFQ and physical functioning independently of negative emotions and (2) beliefs about the need to control thoughts predicted the mental factor of the CFQ independently of negative emotions and lack of cognitive confidence. **Conclusion:** The data support the potential application of the metacognitive model of psychological disorder to understanding CFS.

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Introduction

Chronic fatigue syndrome (CFS) is a debilitating condition characterized by profound disabling fatigue lasting at least 6 months and accompanied by numerous rheumatologic, flu-like, and neuropsychiatric symptoms. Several studies have investigated the role of emotional factors in CFS and have found that anxiety, depression, and stress are associated with the condition [1,2]. While CFS shares a

number of key symptoms with depressive disorders, including diminished concentration, extreme fatigue, problems with memory, and sleep disturbance [3,4], there is evidence to suggest that these are distinct conditions [5]. To date, no medically explained etiology for CFS has been identified; thus, it can be considered a medically unexplained symptom (MUS) disorder.

Over the last 20 years, considerable research efforts have been aimed at examining the role of cognitive and behavioral factors in CFS [6–8]. It has been suggested that CFS patients can misinterpret the extent of symptoms [9,10] and develop negative views of their condition, encouraging processing of schema-consistent and symptom-related information [11,12]. Furthermore, illness perceptions have been shown to account for up to 40% of the variance in self-reported disability and 30% of variance on psychological well-being

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[13,14]. Research studies have suggested that reductions in fatigue following a graded exercise therapy treatment program may be a consequence of a decrease in symptom focus rather than an increase in physical fitness [15] and that improvements in CFS symptoms following a course of cognitive-behavioral therapy (CBT) are related to changes in negative beliefs about the consequence of exercise and activity [16].

Other research studies have also demonstrated that CFS patients have biases toward health-related threat stimuli [17] and somatic information [18], display a tendency to focus on symptoms and illness-related impairment [19–21], and present with high levels of preoccupation about health threats [22]. In addition, despite subjective reports of deficits in cognitive functioning, the lines of evidence for objective differences are inconsistent [23,24].

The role of cognitive processes in MUSs has been conceptualized by Brown [25], who has put forward a model in which two cognitive systems determine the selection of information to be processed: the primary attentional system (PAS), which operates below the level of consciousness, and the secondary attentional system (SAS), which is amenable to executive control [25]. In terms of MUSs, the PAS automatically selects information for processing, activating schemata that lead to a misinterpretation of the sensory world (i.e., symptoms). The PAS is primed to process information in this way because of chronic activation of stored representations relating to illness. Crucially, this results in a subjective experience of symptoms indistinguishable from those with a biological or organic cause. Once such schemata are activated, the individual may then attempt to control cognition via the SAS. Such attempts are invariably unsuccessful because the locus of attention has already been determined by the PAS, contributing to the sustained activation of problematic stored representations [25].

The current study extends this view, positing that metacognitions may, in part, be responsible for governing problematic configurations of the SAS. Metacognitions can be defined as stable knowledge or beliefs about one's own cognitive system [26]. In the area of adult psychopathology, the study of metacognitions is mainly associated with the self-regulatory executive function (S-REF) model [27]. According to the S-REF model, metacognitions predispose individuals to develop response patterns to perceived behavioral, cognitive, or emotional difficulties that are characterized by heightened self-focused attention, avoidance, recyclical thinking patterns, threat monitoring, and thought suppression. Configurations of these strategies constitute a cognitive-attentional syndrome (CAS) [28]. Activation of the CAS is problematic because it causes negative thoughts and emotions to persist, it fails to modify dysfunctional self-beliefs, and it increases the accessibility of negative information [28].

Metacognitions have been divided into two broad sets of beliefs in the S-REF model [29]: (1) negative beliefs concerning the significance, controllability, and danger of

particular types of thoughts (e.g., “it is bad to think thought X” or “I need to control thought X”) and (2) positive beliefs about coping strategies that impact on mental states (such as “worrying will help me get things sorted out in my mind” or “brooding will help me solve the problem”).

The role of metacognitions in psychological dysfunction has been explored using the Metacognitions Questionnaire [30,31] across a wide range of disorders [29,32–36]. This questionnaire consists of five distinct factors: (1) positive beliefs about worry, measuring the extent to which a person believes that perseverative thinking is useful; (2) negative beliefs about thoughts concerning uncontrollability and danger, assessing the extent to which a person thinks that perseverative thinking is uncontrollable and dangerous; (3) lack of cognitive confidence, assessing confidence in attention and memory; (4) beliefs about the need to control thoughts, assessing the extent to which a person believes that certain types of thoughts need to be suppressed; and (5) cognitive self-consciousness, measuring the tendency to monitor one's own thoughts and focus attention inwards.

The aim of this study was to determine whether metacognitions are associated with symptom severity in CFS. This begins to address the question of whether the S-REF model might be applicable to understanding MUSs, such as CFS. However, since links between metacognitions and negative emotions are already reliably established [29], it is necessary to demonstrate relationships that are independent of these emotions.

Three dimensions of metacognitions have been found to be consistently implicated in psychological dysfunction across a variety of domains: negative beliefs about thoughts concerning uncontrollability and danger, lack of cognitive confidence, and beliefs about the need to control thoughts. It is possible that these or other dimensions can predict symptom severity. Specifically, negative beliefs about thoughts concerning uncontrollability and danger and beliefs about the need to control thoughts are likely to contribute to persistent and negative interpretations of experience and the activation of maladaptive coping strategies (e.g., thought suppression and rumination). Such responses as characterized by the CAS would contribute to cognitive overload, to subjective executive impairment, and to feelings of mental and psychological fatigue. Similarly, lack of cognitive confidence could contribute to the experience of symptoms by limiting the choice and implementation of coping strategies involving sustained effort or performance when feeling fatigued.

The following hypotheses were thus tested: (1) metacognitions (negative beliefs about thoughts concerning uncontrollability and danger, lack of cognitive confidence, and beliefs about the need to control thoughts) will be positively correlated with symptom severity; (2) negative emotions (anxiety, depression, and stress) will be positively correlated with symptom severity; and (3) metacognitions will independently predict symptom severity.

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