Fatigue and psychosocial variables in autoimmune rheumatic disease and chronic fatigue syndrome: A cross-sectional comparison

Sheila Ali, Faith Matcham, Katherine Irving, Trudie Chalder *

King's College London, Academic Department of Psychological Medicine, Weston Education Centre, SE5 9RJ, London, United Kingdom

ABSTRACT

Objective: Fatigue is common in autoimmune rheumatic diseases (ARD). This study compared symptom-related cognitions, beliefs, behaviours, quality of sleep, lack of acceptance and distress in participants with ARD such as rheumatoid arthritis (RA), seronegative spondyloarthropathy (SpA), and connective tissue disease (CTD), and participants with chronic fatigue syndrome (CFS).
Methods: 303 participants with RA, SpA, CTD and CFS completed questionnaire measures of fatigue, social adjustment, cognitive-behavioural responses, lack of acceptance, distress and quality of sleep. The RA, SpA and CTD groups were first compared with each other. They were then combined into one group and compared with the CFS group.
Results: There were no statistically significant differences between the RA, SpA or CTD groups for any of the measures. The CFS group was more fatigued, reported more distress and sleep disturbance and had worse social adjustment than the ARD group after adjustment for age and illness duration. After adjustment for fatigue, age, and illness duration, the CFS group scored more highly on lack of acceptance and avoidance/resting behaviour while the ARD group showed significantly higher levels of catastrophizing, damage beliefs, and symptom focusing than the CFS group.
Conclusion: Fatigue in rheumatic diseases may be perpetuated by similar underlying transdiagnostic processes. The ARD and CFS groups showed similarities but also key differences in their responses to symptoms. Specific aspects of treatment may need to be tailored towards each group. For example, lack of acceptance and avoidance behaviour may be particularly important in perpetuating fatigue in CFS.

© 2016 Published by Elsevier Inc.

1. Introduction

Transdiagnostic theory proposes that heterogeneous illnesses share similar underlying emotional, cognitive and behavioural processes, and that the same treatment can be used across different diagnoses [1,2]. This approach can be applied to fatigue in chronic illnesses.

Fatigue is common in the general population, with 18.3% of the general population reporting substantial fatigue for six months or longer [3]. It is a significant feature of CFS (chronic fatigue syndrome). Fatigue is also a ubiquitous symptom of many chronic diseases [4], including ARD (autoimmune rheumatic diseases). From a transdiagnostic perspective, the cognitive and behavioural responses to fatigue may be similar across different rheumatic diseases and CFS, and may respond to similar treatment approaches regardless of the specific diagnosis.

CFS is characterised by long-standing fatigue and includes physical and mental symptoms such as muscle pain and concentration difficulties, which can impact on physical and social functioning [5, 6]. Moreover, patients often report sleep disturbance and distress [7–10]. In ARD such as rheumatoid arthritis (RA), seronegative spondyloarthropathy (SpA) and connective tissue diseases (CTD), fatigue is a pervasive symptom which affects every day functioning, and has been associated with decreased quality of life and increased disease burden [11–19]. Fatigue often persists even after disease activity has been managed with disease-modifying medication [20].

There is some evidence that fatigue in ARD could be associated with cognitive and behavioural factors. For example, cognitive factors such as self-efficacy and pain catastrophizing have been shown to correlate with fatigue and distress in both SLE (systemic lupus erythematosus) [21] and Sjögren's syndrome [22]. In RA a systematic review of psychological correlates of fatigue [23] found evidence that RA-related unhelpful cognitions such as lower arthritis self-efficacy were associated with higher levels of fatigue [24,25].

Similarly, research suggests that fatigue in CFS may also be maintained by a complex interplay of cognitive, behavioural and physiological factors. According to the cognitive-behavioural model of fatigue in CFS, unhelpful beliefs about physical activity can perpetuate fatigue

severity, and an individual may reduce or avoid certain activities for fear of worsening symptoms. This can lead to a vicious cycle of negative beliefs about activity, avoidance of activity, prolonged rest, and worsening symptoms, along with a reinforced belief that activity is harmful [26,27]. This model is supported by Petrie et al.'s finding that catastrophic beliefs were associated with worse fatigue and functioning in patients with CFS [28]. Another view is that lack of acceptance, or a desire to control symptoms, may cause distress and impaired functioning. Research suggests that a lack of acceptance of symptoms is associated with higher levels of fatigue and disability, and in turn higher levels of acceptance are associated with better psychological well-being [29,30].

We know of only one study to date which has compared the illness-related cognitions of patients with CFS and those with a rheumatic disease. Moss-Morris and Chalder [31] compared illness-related cognitions of RA patients with cognitions of patients with CFS, and found that the patients with CFS had more negative illness beliefs than patients with RA as well as more negative beliefs about the course and prognosis of their illness. This may be due to differences in the way that CFS and RA are defined and diagnosed. For example, rheumatoid arthritis includes objective manifestations of disease such as joint swelling or damage as well as subjective symptoms such as pain, whereas the diagnosis of chronic fatigue syndrome relies largely on subjective self-reports of symptomatology [31]. Patients with CFS report experiencing stigma and scepticism from health professionals, and difficulties with obtaining a diagnosis [32,33]. Therefore their experiences may differ from those of RA patients.

In this paper, we suggest that the processes that maintain fatigue in the context of CFS, which is defined by fatigue, may be similar to the processes that perpetuate fatigue in chronic diseases such as autoimmune rheumatic diseases (ARD). The purpose of the current study was to examine the levels of fatigue, disability, distress and sleep problems in participants with ARD such as RA, CTD and SpA. We also sought to examine the symptom-related cognitive and behavioural responses of these participants. We hypothesised that there would be no differences between the three ARD groups on the cognitive and behavioural responses subscales. Another aim of the study was to compare the fatigue, cognitions and behaviours of participants with CFS and a heterogeneous group of participants with ARD. It was hypothesised that the CFS group would show higher levels of fatigue and disability than the ARD group. Also, given the previous research showing differences between participants with CFS and RA in terms of illness-related cognitions [31], we hypothesised that participants with CFS would show more extreme cognitive behavioural responses and a higher lack of acceptance than participants with ARD.

2. Methods

2.1. Participants and procedure

This cross-sectional questionnaire study compared the questionnaire data of participants with rheumatoid arthritis (RA), seronegative spondyloarthropathy (SpA) and connective tissue diseases (CTD). These ARD groups were subsequently compared with a group of participants with CFS. Data was collected in accordance with the ethical principles of the Declaration of Helsinki. Data collection for the participants with ARD was approved by the London Dulwich Research Ethics Committee; REC reference number: 10/H0808/135. Collection of data from the CFS patients was approved by the audit committee of the South London and Maudsley NHS Foundation Trust. Data collection took place from November 2011 to March 2013.

2.1.1. Autoimmune rheumatic disease groups

Participants with ARD were recruited consecutively from outpatient rheumatology clinics. They were approached by a rheumatologist or a researcher and invited to participate in the study. Participants gave written, informed consent. Participants with ARD completed questionnaires at an outpatient appointment with a rheumatologist. Questionnaires were completed in the waiting room of the hospital or in the participant's home. Patients were diagnosed by a rheumatologist in accordance with accepted diagnostic or classification criteria, where appropriate [34–39].

Participants were subsequently grouped into three broad categories according to their clinician-verified diagnosis. The categories were: Rheumatoid arthritis (RA), seronegative spondyloarthropathy (SpA) and connective tissue disease (CTD). The SpA group included the following diagnoses (in order of prevalence): psoriatic arthritis, seronegative spondyloarthritis (unspecified), enteropathic arthritis, ankylosing spondylitis and reactive arthritis. The CTD group included the following diagnoses (in order of prevalence): connective tissue disease (unspecified), systematic lupus erythematosus, myositis, vasculitis, Behçet's disease and Sjögren's syndrome. Participants were excluded from the analysis if they did not have a clinician-verified diagnosis, or if their diagnosis did not fit into the categories of RA, SpA or CTD. Subsequently, participants in the RA, SpA and CTD groups were combined to form a group of ARD in order to be compared with the CFS group.

2.1.2. Chronic fatigue syndrome group

Participants with CFS were recruited consecutively from a specialist outpatient clinic for chronic fatigue syndrome. A medical assessment was undertaken in accordance with NICE Guidelines [40] to confirm a diagnosis of CFS and rule out other causes of fatigue. Participants were excluded from the analysis if they did not have a diagnosis of CFS or if they had a comorbid illness which may account for the fatigue (e.g. bipolar disorder). Participants completed questionnaires after the specialist assessment by a clinician and prior to starting treatment for CFS.

2.2. Questionnaires

All participants completed questionnaires including the following:

- *Chalder Fatigue Questionnaire* [41,42]
  This is an 11-item scale which measures physical and mental fatigue. It has been validated in fatigue and CFS. Scores on the 11 items can be summed to calculate a fatigue score out of 33. A higher score is associated with greater levels of fatigue. It is reliable and valid. Reliability in this sample, as measured using Cronbach's alpha, was 0.93 and 0.92 for the CFS and ARD groups respectively.
- *Cognitive Behavioural Responses Questionnaire* [8,43,44]
  The Cognitive Behavioural Responses Questionnaire (CBRQ) is a measure of beliefs about symptoms and behavioural responses to symptoms. It was developed specifically to examine unhelpful symptom-related beliefs and coping behaviour, for example, avoidance of activity, symptom focusing, catastrophic thoughts about symptoms, and embarrassment about symptoms. This questionnaire has been shown to be reliable and valid in patients with CFS and multiple sclerosis [8,43,44]. The questionnaire consists of seven subscales. There are five subscales which measure cognitive responses (fear avoidance, symptom focusing, catastrophizing, embarrassment avoidance, damage beliefs). There are also two subscales which measure behavioural responses (avoidance/resting behaviour and all-or-nothing behaviour). Participants are presented with a series of statements which they are asked to rate on a scale of 0 (strongly disagree) to 4 (strongly agree). Totals are calculated for each subscale. Higher scores indicate more extreme beliefs or behavioural responses. Examples of items from these subscales can be seen in Table A1 in the Appendix. Examination of internal consistency showed that the acceptance measure and the subscales of the CBRQ were reliable in both the CFS and ARD groups (see Table A2 in the Appendix).
- *Work and Social Adjustment Scale* [45,46]
  This is a five-item scale which measures social functioning and social adjustment. Each item has a maximum score of 8 and the five items