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Treatment expectations influence the outcome of multidisciplinary rehabilitation treatment in patients with CFS

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ABSTRACT

Objective: To improve the effectiveness of treatment in patients with chronic fatigue syndrome it is worthwhile studying factors influencing outcomes. The aims of this study were (1) to assess the association of expectancy and credibility on treatment outcomes, and (2) to identify baseline variables associated with treatment expectancy and credibility.
Methods: 122 patients were included in a randomized controlled trial of whom 60 received cognitive behavioural therapy (CBT) and 62 multidisciplinary rehabilitation treatment (MRT). Expectancy and credibility were measured with the credibility and expectancy questionnaire. Outcomes of treatment, fatigue, and quality of life (QoL), were measured at baseline and post-treatment. Multiple linear regressions were performed to analyse associations.
Results: In explaining fatigue and the physical component of the QoL, the effect of expectancy was significant for MRT, whereas in CBT no such associations were found. The main effect of expectancy on the mental component of QoL was not significant. For credibility, the overall effect on fatigue and the physical component of QoL was not significant. In explaining the mental component of QoL, the interaction between treatment and credibility was significant. However, the effects within each group were not significant.
In the regression model with expectancy as dependent variable, only treatment centre appeared significantly associated. In explaining credibility, treatment centre, treatment allocation and depression contributed significantly.
Conclusions: For clinical practice it seems important to check the expectations of the patient, since expectations influence the outcome after MRT.

Introduction

Chronic Fatigue Syndrome (CFS) is a condition characterised by persistent fatigue which often leads to a substantial limitation in function, activities and participation [1]. Cognitive behavioural therapy (CBT), a monodisciplinary treatment with a psychotherapeutic approach focusing on the perpetuating factors (cognitions and behaviour) of the CFS, has shown to be an effective, evidence based treatment for patients with CFS [2]. Recently, a new, innovative multidisciplinary rehabilitation treatment (MRT) has been developed and compared with CBT in a randomized controlled trial. MRT is a multidisciplinary treatment in which different interventions (for example CBT, gradual increasing activity and body awareness) can be combined to treat the patient depending on the modifiable components and personal aims of the patient [3]. Results of the randomized trial comparing MRT and CBT showed that immediately post-treatment (26 weeks after start of treatment) both treatments showed significant reduction of fatigue and increase of quality of life, however the between group differences were not significant. At 52 weeks follow-up, MRT was more effective in reducing fatigue and equally effective in improving quality of life [4]. To understand the working mechanisms of these interventions and to find out how to increase their effectiveness, it is important to study factors that influence the outcome of treatment. A factor that might influence important treatment outcomes such as fatigue and quality of life, is the expectancy of the patient. Expectations or predicted expectations are what the patient believes will occur after following treatment [5]. Heins et al. (2013) [6] were the first to investigate whether outcome expectations contribute to the reduction in fatigue during CBT for patients with CFS. Twenty-five percent of the variance in post-treatment fatigue was jointly explained by outcome expectations and agreement between therapist and patient on the content of treatment and how to achieve

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the patient's goals [6]. It is postulated that these factors exert their positive effect through a change in fatigue perpetuating factors. In patients with chronic low back pain, similar results were found regarding the influence of expectations on the outcome. Expectations explained 1–8% of the variance in the equation of four different outcome variables after CBT, namely: motor behaviour, pain coping and control, negative effect and QoL [7]. Whether expectations influence the outcome after MRT in patients with CFS needs to be evaluated.

Another factor, which might influence treatment outcomes is credibility. Credibility is how believable, convincing and logical the treatment seems to the patient. In patients with chronic low back pain, credibility was a significant predictor for global perceived effect in patients following a rehabilitation treatment, which combined active physical therapy with CBT [8]. In patients with CFS, the association between credibility and outcome of treatment has never been studied before. If expectancy and/or credibility influence the treatment effects, interventions could be designed to increase these concepts, which might increase effectiveness of the treatment. To influence the expectancy and/or credibility it is worthwhile studying factors that are associated with these concepts. Age, internal control over symptoms, self-efficacy, depression, duration of complaints and severity of symptoms have been proposed as factors influencing expectations before treatment [8–10]. Whether these factors influence the expectancy or credibility in patients with CFS referred for treatment needs to be studied.

The purpose of this study was two-fold: first, to assess the association of patients' treatment expectancy and credibility on the outcome of treatment (change in fatigue severity and quality of life), and whether these associations are different for MRT and CBT respectively. Second, to study the effect of age, treatment centre, type of treatment allocation, self-efficacy, symptoms of depression and duration of complaints at baseline on treatment expectancy and credibility.

Methods

This study is part of the FatiGo trial, a multi-centre, pragmatic two-arm randomized controlled trial (ISRCTN77567702) of which the methods and results are described previously [3,4]. The main aim of the FatiGo trial was to analyse the difference in treatment effect between MRT and CBT for patients with CFS.

Participants

Patients with complaints of chronic fatigue referred to Revant Rehabilitation Centre in Breda, Rehabilitation Centre Blixembosch in Eindhoven, Reade Centre for Rheumatology and Rehabilitation in Amsterdam and Adelante Rehabilitation Centre in Hoensbroek between December 1st, 2008 and January 31st, 2011 were asked to participate. Inclusion criteria were: met the US Centers for Disease Control and Prevention (CDC-94) criteria for CFS [1]; Checklist Individual Strength (CIS) [11] fatigue subscale score of 40 or more [12]; willing to participate in a treatment aimed at changing behaviour; aged between 18 and 60 years; and comprehended the written and verbal Dutch. Patients were excluded if they suffered from a medical condition explaining the presence of chronic fatigue, had a psychotic, major or bipolar depressive disorder, dementia, anorexia, bulimia nervosa, alcohol and/or drug abuse, a body mass index ≥45, or were pregnant. Patients, who had already received CBT or MRT for CFS, or had to travel more than 1 h to the nearest participating rehabilitation centre were also excluded. The multistage inclusion process is more fully described elsewhere [3].

Outcomes

Assessment of outcomes took place before treatment (baseline), 26 weeks (post-treatment) and 52 weeks after start of treatment (follow-up). Fatigue severity was measured by the CIS fatigue subscale (eight items scored on a 7-point Likert scale, range 8–56, lower scores indicate less fatigue) [13]. Previous assessment of measurement properties suggests adequate reliability and validity [14].

Health-related QoL was measured by the Short-Form 36 (SF-36) [15]. The SF-36 consists of eight subscales (range 0–100, higher score indicate better quality of life). The SF-36 subscales can be summed to provide in a physical component summary score (PCS) and a mental component summary score (MCS) [16]. Psychometric properties of the SF-36 are satisfactory [17]. Symptoms of depression was measured with the Symptom Check List-90 (SCL-90) [18] subscale depression and self-efficacy with the Self-Efficacy Scale (SES) [13].

Expectancy and credibility

Expectancy and credibility were measured with the Dutch version of the Devilly and Borkovec credibility and expectancy questionnaire (CEQ) [8,19]. The CEQ has three items to measure expectancy and three to measure credibility. Items were scored on a scale from 1 (not at all) to 9 (very much), or a scale from 0% (not at all) to 100% (very much). Percentage rating scores were transformed to a 1 to 9 rating [8]. Separate scores were calculated for expectancy and credibility, each ranging from 3 to 27, with a higher score indicating higher expectation or higher credibility. Expectancy and credibility were assessed two weeks after start of treatment, after the treatment rationale was explained. In MRT, the physical therapist asked the patient to complete the CEQ, in CBT, the psychologist or cognitive behavioural therapist did so. After completion the patients were asked to return the questionnaire in a sealed envelope. To maintain confidentiality and to avoid socially desirable answers, the patients were told not to share their responses with the therapist.

Interventions

After baseline assessment, patients were randomly assigned to MRT or CBT. In MRT, gradual reactivation, pacing, mindfulness, body awareness therapy, normalising sleep–wake rhythm and social reintegration are combined with CBT. The biopsychosocial model is the basis of therapy, suggesting that multiple factors (physical, mental and social factors) may lead to the development and persistence of CFS [20]. MRT was patient tailored, based on addressing the modifiable factors thought to be related to the precipitation and perpetuation of the CFS. These components and the personal goals of a patient are the focus of the treatment. MRT was provided by an interdisciplinary team consisting of a physical therapist, occupational therapist, psychologist, social worker and consultant in rehabilitation medicine. CBT is a psychotherapeutic approach where perpetuating cognitions and behaviours such as high physical attributions, decreased physical activity, low level of sense of control, focusing on physical sensation and perceived lack of social support are the focus of the intervention [21]. CBT is a monodisciplinary treatment given by a psychologist or cognitive behavioural therapist.

Analyses

Numerical variables are presented by means (SD), where numbers (%) describe categorical variables. The differences between treatment groups were analysed using independent-sample *t*-test for numerical variables and Chi-square test or Fisher's exact test, where appropriate, for categorical variables.

To measure the role of expectancy and credibility on the effectiveness of the treatment, multiple linear regression analyses were used with the post-treatment scores (at 26 weeks after start of treatment) of fatigue severity and the physical and mental component summary score of QoL as outcomes. The analyses were performed in three steps: 1) a model with age, treatment centre, baseline scores of the outcome, treatment allocation and expectancy and credibility as explanatory variables. 2) Same variables as step 1, but also including the interactions of expectancy and credibility with treatment allocation