

## Determinants of health care use in chronic fatigue syndrome patients: A cross-sectional study

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### Abstract

**Background:** Chronic fatigue syndrome (CFS) is associated with a high use of health care services. To reduce the related costs for patients and society, it will be useful to know which factors determine CFS patients' amount of health care use. Little is known, however, about these factors. **Method:** The present study retrospectively performed a cross-sectional analysis to investigate the possible factors determining CFS patients' health care use. A total of 263 CFS patients, derived from two subgroups (149 from tertiary care and 114 from primary/secondary care), participated. Health care use was measured with a questionnaire asking details on consumption over the past 6 months. Fatigue severity and physical functioning were measured with the subscale Experienced Fatigue of the Checklist Individual Strength (CIS-20) and the subscale Physical Functioning of the SF-36, respectively. Multiple regression analysis, *T*-tests, and  $\chi^2$  tests were performed. **Results:** The regression

analysis revealed that, after controlling for patient characteristics (explaining 13%), fatigue factors added 4% predictive value and certain perpetuating factors of fatigue, including focus on bodily symptoms and attributions of fatigue, added another 5%. The analysis of subgroups revealed that, compared to the tertiary care population, fewer patients from primary/secondary care had visited a medical specialist (50% vs. 71%), used antidepressants (16% vs. 25%) and tranquilizers (3% vs. 18%), and had spent a night in hospital (7% vs. 10%). However, overall costs of health care between these subgroups did not differ. **Conclusions:** This study showed that illness duration, physical impairment due to fatigue, and psychological perpetuating factors of fatigue do determine the variance in CFS patients' health care use. These results give clear directions for treating CFS patients and managing health care for CFS.

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**Keywords:** Chronic fatigue syndrome; Health care use; Health care management; Cost reduction

### Introduction

Chronic fatigue syndrome (CFS) is characterised by persistent or relapsing severe fatigue that lasts for at least 6 months, leads to considerable reductions in daily functioning, and cannot be explained by a medical condition [1]. CFS

is associated with a high use of health care services and, hence, with high societal costs [2–6]. It has been found that 39% of the CFS population in the UK uses at least one type of prescribed medication and 71% of them receive informal home care [2]. Jones et al. [5] found that, compared to nonfatigued controls, more CFS patients reported to using any kind of (un)prescribed medication (92% vs. 82%,  $P < .00$ ) and to using more different types of medication (5 vs. 2,  $P < .00$ ). In two earlier studies, it was revealed that the mean of health care visits per year that CFS patients reported was above 20 [7,8]. There are several reasons for CFS patients' frequent use of health care services. First, in trying to get

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more certainty about their complaints, CFS patients might frequently visit GPs and medical specialists, but mostly go home again with the information that no medical cause for the fatigue was found. Second, many CFS patients do try a lot of different therapies, but most therapies that are available do not lead to recovery [9,10]. Third, many CFS patients suffer from depression, anxiety, or sleeping problems [11] for which a lot of medication is being prescribed.

Although CFS patients' high use of health care services is familiar, little is known about the factors determining the individual decisions of CFS patients to seek or not to seek help [2,12]. Knowing these factors might be of importance though when making decisions concerning treatment and management of CFS, for these factors then could get special attention in the treatment of CFS patients and in the organisation of health care.

There might be many factors that influence the use of health care services, such as illness-related characteristics, personal characteristics, psychological mechanisms, social aspects, and financial factors [2]. For the present study, a selection of predictors was made, based on clinical experience and empirical research at the Nijmegen Expert Centre for Chronic Fatigue (ECCF). Vercoulen et al. [13] have found that certain psychological factors are responsible for the perpetuation of severe fatigue in CFS, and they tested a model explaining the perpetuating processes. The concerning factors are (1) a high level of somatic attributions and a low level of psychological attributions of fatigue, (2) a strong focus on bodily symptoms, (3) a low self-efficacy towards symptoms of fatigue, and (4) a low level of physical activity. The model explains that attributing fatigue complaints to a somatic cause leads to low levels of physical activity, which in turn contributes to fatigue severity. Self-efficacy and focusing on bodily symptoms both have a direct influence on fatigue. In the present study, we aimed to investigate to what degree these factors also explain the variance in CFS patients' health care use. We assumed that these factors, by enhancing severe fatigue, might also lead to a higher use of health care services. Additionally, we expected a direct influence of these factors on health care use. A high somatic attribution (and low psychological attribution) might stimulate patients to ask a GP for medication and for referral to a medical specialist to find a somatic answer for the unexplained fatigue. Correlations between somatic causal attributions and increased health care use have been found in previous studies among patients with somatoform disorders [14] and in the general population [15]. Focusing on bodily symptoms is known to increase perceived pain [16,17] and might thus stimulate the use of health care services. A low level of self-efficacy towards symptoms of fatigue might undermine patients' own strengths to deal with complaints and may make them feel dependent on doctors. In the general population, absence of regular physical activity increases the risk for several different acute complaints and (chronic) diseases that lead to medical consumption [18]. Overweight and obesity, as

frequently being a consequence of physical inactivity, were found to lead to more frequent visits to a GP and to higher use of prescribed medication [19].

Secondly, concerning possible differences between specific patient populations, the present study compared and analysed the health care use of CFS patients referred to a primary/secondary care institution with that of CFS patients referred to a tertiary care institution. The hypothesis hereby was that patients selected at specialized tertiary care CFS clinics might suffer from more severe and longer existing fatigue and therefore might have a higher use of health care services than those referred to primary or secondary care.

The research questions of the present study were as follows: (1) To what extent do illness variables and the perpetuating factors of severe fatigue determine the volume of CFS patients' health care use? (2) Are the pattern and volume of health care use of CFS patients in primary/secondary care different from those in tertiary care CFS patients?

## Method

### *Patients and design*

The present study is a retrospective cross-sectional survey based on two samples of CFS patients. A total of 263 CFS patients, aged between 15 and 72, participated. They were all enrolled between January 2004 and March 2006 either at a community mental health center, or MHC ( $n=114$ ), or at the ECCF ( $n=149$ ). All patients fulfilled the CDC-94 criteria for CFS [1]. The MHC is a middle-sized primary/secondary health care institution located in eastern Netherlands and covering mostly rural and some urbanised areas. It offers mainly mental services for a full range of problems and patients, both outpatient and inpatient. The majority of CFS patients from the MHC (108 of 114) were referred by a GP. To investigate the second research question of this study, patients from this setting were compared with those from the ECCF. The ECCF is a tertiary care institution of the Radboud University Nijmegen Medical Centre. At the ECCF, the majority of CFS patients (92 of 149) were referred by a medical specialist.

### *Measurements*

#### *Dependent variable*

Health care use was measured with an elaborate questionnaire asking details about health care use over the past 6 months. It contained questions about the amount of visits to GPs, medical specialists, psychiatrists, psychologists, physiotherapists, or alternative practitioners; about the mean amount of hours per week of (in)formal home care, of hospital care (number of nights and reason for hospital staying); and about medication use (categorized as antidepressants, pain medication, anxiety medication, and

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