



# Management of cancer-related fatigue during chemotherapy through telephone motivational interviewing: Modeling and randomized exploratory trial



Emma Ream <sup>a,\*</sup>, Gian Gargaro <sup>b</sup>, Andrea Barsevick <sup>c</sup>, Alison Richardson <sup>d</sup>

<sup>a</sup> Florence Nightingale School of Nursing and Midwifery, King's College London, London, UK

<sup>b</sup> Independent Researcher formerly Florence Nightingale School of Nursing and Midwifery, King's College London, London, UK

<sup>c</sup> Cancer Prevention & Control Program, Fox Chase Cancer Center, Philadelphia, USA

<sup>d</sup> Faculty of Health Sciences, University of Southampton, Southampton, UK

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## ABSTRACT

**Objective:** Fatigue is a common cancer-related symptom and exacerbated by chemotherapy. Psychological interventions for fatigue show promise. One, Beating Fatigue, was adapted for delivery by telephone and evaluated in an exploratory trial.

**Methods:** Eight patients and 12 professionals contributed to focus groups that guided adaptation of the intervention. The intervention, modified for delivery by telephone using motivational interviewing, was tested in an exploratory trial. Forty-four patients were recruited to the trial and randomized between the intervention ( $n = 23$ ) and control ( $n = 21$ ). Outcome data were collected on fatigue intensity, fatigue distress, fatigue self-efficacy, anxiety and depression at baseline and following completion of chemotherapy. These data were augmented by interviews conducted to inform understanding of the intervention's mechanism, feasibility and acceptability.

**Results:** The intervention was both feasible and acceptable to patients and most reduced fatigue distress (Effect Size  $ES = 0.62$ ). It also reduced fatigue intensity ( $ES = 0.18$ ), fatigue self-efficacy ( $ES = -0.34$ ), and anxiety ( $ES = 0.31$ ). It did not reduce depression.

**Conclusion:** These preliminary data are encouraging and support the delivery of interventions for cancer-related fatigue by telephone. Motivational interviewing appeared key to the intervention's success. A larger definitive RCT is indicated.

**Practice Implications:** Opportunities should be sought to deliver psychologically-based interventions for fatigue by telephone.

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## 1. Introduction

Fatigue is frequently encountered by people with cancer [1]. It can be unrelenting, disrupt physical, social and role functioning and affect both emotional wellbeing [2] and quality of life [3,4]. It manifests across the disease and treatment trajectory but typically increases – and is associated with – chemotherapy [5]. Despite the prevalence and consequences of cancer-related fatigue, evidence suggests health professionals engage little in relieving it [6]. This could be for many reasons; clinicians may be unaware of interventions for its relief.

A limited number of pharmacological interventions for cancer-related fatigue have been tested. Reviews of data generated suggest methylphenidate and erythropoietin confer greatest benefit [7]. However, evidence suggests methylphenidate may only reduce fatigue in patients with severe fatigue and/or advanced disease [8]. Further, concerns have been raised over the safety of erythropoietin – it is no longer recommended for treatment of cancer-related fatigue [7]. Consequently, pharmacological treatments are rarely used to treat this symptom.

Exercise interventions have been tested. A systematic review of exercise for cancer-related fatigue [9] concluded that physical exercise can help reduce fatigue during and after cancer treatment. However, the best type or intensity of exercise for reducing fatigue has not been determined. Further, exercise is not acceptable to all and compliance is a challenge [10].

Finally, psychologically-based interventions for fatigue have been appraised in systematic reviews [11,12]. These interventions

\* Corresponding author at: King's College London, Florence Nightingale Faculty of Nursing & Midwifery, James Clerk Maxwell Building, Waterloo Campus, 57 Waterloo Road, London, SE1 8WA, UK. Tel.: +44 0 207 848 3011; fax: +44 0 207 848 3764.  
E-mail address: [emma.ream@kcl.ac.uk](mailto:emma.ream@kcl.ac.uk) (E. Ream).

intend to alter cognition, coping strategies or behavior. They include cognitive behavioral therapy, psychotherapy, psycho educational and supportive or supportive-expressive interventions delivered either one-to-one or in group settings [11,12]. Reviews by Jacobsen et al. [11] and Goedendorp et al. [12] suggest psychologically-based interventions are more effective than activity-based ones for alleviating fatigue [11] and most effective when aimed specifically at reducing fatigue rather than directed at symptoms or quality of life generally [12].

Goedendorp [12] identified five psychologically-based interventions specifically for cancer-related fatigue that generated statistically significant improvements. Of these, three were developed for, and tested solely in, people having chemotherapy [13–15]. The three effective interventions were similar. They incorporated: education about fatigue; teaching in self-care and coping strategies; training in activity management; and balancing activity with rest [12]. They were delivered one-to-one and all involved at least some face-to-face contact. Beating Fatigue is one of the interventions referred to in Goedendorp et al.'s review [12] that generated statistically significant improvements [13] notably with regards to reducing fatigue-related distress ( $ES = 0.31$ ) [13]. The study authors developed this intervention and sought to determine whether it could be adapted for delivery solely by telephone. Given the fiscal pressures affecting health services in many countries, a supportive intervention that does not rely on face-to-face contact is warranted.

Previous studies have determined that telephone-delivered interventions for cancer symptoms can be feasible and acceptable [16–18]. However, few have been developed for delivery solely by telephone – i.e. without additional face to face consultation – and none have expressly sought to ameliorate fatigue. Novel interventions delivered solely by telephone, like the one reported on in this paper, could have exciting potential for delivery by national cancer helplines. This paper reports on the process taken to adapt the intervention for telephone delivery and presents findings from an exploratory randomized trial.

### 1.1. Beating Fatigue

Beating Fatigue was developed specifically for people starting chemotherapy. It is delivered over the first three treatment cycles and aims to help patients manage fatigue through energy conservation and management and optimizing activity and functioning. It incorporates several interacting components tailored to individual need: education on fatigue; assessment and monitoring of fatigue; coaching in self-care; and provision of emotional support [13].

These components are delivered through:

1. An *investigator-designed information pack* that informed a nationally available publication, 'Coping with Fatigue' [19]. This is provided at the start of treatment.
2. A *fatigue diary* that participants complete during the week following each cycle of chemotherapy (when fatigue is intense) to facilitate self-evaluation of fatigue and its effect on daily life. This is provided at the start of treatment.
3. *One face-to-face consultation with a support nurse* in patients' homes during each of treatment cycles 1–3. Support nurses have previously been oncology nurses with counseling qualifications. Consultations entail detailed nursing assessment of fatigue following a structured interview guide; review of patients' diary entries; reflection with patients on level of fatigue experienced, their thoughts and strategies for its resolution; and establishment of desired goals. Strategies promoted include sleep hygiene, activity enhancement, pacing, and dietary modifications (See Ream et al. [13] for more details.) Consultations last 45 min on average, and are dedicated to solely delivering the intervention. No other treatment or support-related activities are undertaken. The initial consultation is typically longest.

Beating Fatigue is underpinned by Leventhal et al.'s Self-regulatory theory [20]. This assumes behavior is purposeful, and consciously directed at achieving goals and reducing obstacles that hinder their attainment [21]. Further, it assumes people's willingness to manage health/illness (or in this case fatigue) depends on both their views regarding the symptom's influence on functioning and wellbeing and their emotional response to it, e.g. fear or anxiety. It is assumed these cognitions influence how actively people strive to adopt self-care measures to manage it.

Goals provide a reference to measure progress against and self-monitoring is an important facet of interventions underpinned by self-regulatory theory. The original Beating Fatigue intervention [13] was provided as chemotherapy commenced to prepare patients for fatigue.

## 2. Methods

### 2.1. Design

This mixed-method exploratory study was undertaken over 12 months and incorporated Phases I (modeling) and II (exploratory trial) of the MRC framework for developing and evaluating complex interventions [22].

Both phases recruited patients with a diagnosis of either breast or colorectal cancer or a lymphoma. These disease groups were selected as they are common cancers routinely treated with intravenous chemotherapy. Further, fatigue is frequently reported by these patient groups whilst undergoing chemotherapy [5,23] and the Beating Fatigue intervention has been shown to reduce fatigue and its associated distress in these patients [13].

Ethical approval was obtained from Bromley Local Research Ethics Committee Ref: 07/H0805/27 and local governance approval from Guy's and St Thomas' NHS Foundation Trust R & D department Ref: RJ1 07/0207.

### 2.2. Phase I–Modeling

This phase explored the feasibility and acceptability of a telephone-delivered intervention for fatigue and refined Beating Fatigue for delivery by telephone.

Two focus groups were conducted – one with patients and the other with nurses, oncologists and allied health professionals. These explored both how cancer-related fatigue affects patients and the suitability and potential utility of a telephone-delivered psychologically-based intervention. Patients and professionals were recruited to the groups from a large cancer centre; focus groups were run on hospital premises. Patients were eligible to participate if they were 18 or over, could communicate in English, had completed IV chemotherapy for treatment of breast or colorectal cancer or a lymphoma in the previous 6 months and had experienced at least moderate fatigue. The National Cancer Comprehensive Cancer Network (NCCN) definition of moderate fatigue was used – a score of 4 or above on a numeric rating scale from 1 to 10 [24]. A consecutive convenience sample of eligible patients was identified by the multidisciplinary team. The team introduced patients to the researchers who explained the study to, and consented, eligible patients. The multidisciplinary team helped identify professionals providing care to people having chemotherapy. Researchers approached these professionals about the study by email and attained written consent to participate. An email questionnaire was circulated to health professionals unable to attend.

Both focus groups explored: experience of fatigue; experience of usual care; interventions/actions that reduced fatigue; and perceptions of telephone-delivered interventions to enhance fatigue management and their interface with usual care.

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