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A patient education program is effective in reducing cancer-related fatigue: A multi-centre randomised two-group waiting-list controlled intervention trial

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Cancer-related fatigue
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A B S T R A C T

Objective: To evaluate a patient education program that aims at reducing perceived fatigue in cancer survivors.
Methods: In ten German centres, 261 patients with cancer-related fatigue were randomly assigned to a patient education program consisting of 6 sessions à 90 min or standard care. The primary outcome measure was cancer-related fatigue. Data were analysed using analysis of variance (ANOVA) with repeated measures.
Results: Patients in the intervention group showed statistically significant reduction in cancer-related fatigue ($F = 76.510$, $p < 0.001$, $\eta^2 = 0.248$). Secondary outcomes also showed significant improvements in all measures, including quality of life ($F = 29.607$, $p < 0.001$, $\eta^2 = 0.113$), general self-efficacy ($F = 27.680$, $p < 0.001$, $\eta^2 = 0.107$), exercise self-efficacy ($F = 49.230$, $p < 0.001$, $\eta^2 = 0.175$), physical activity ($F = 8.036$, $p < 0.001$, $\eta^2 = 0.033$), anxiety ($F = 33.194$, $p < 0.001$, $\eta^2 = 0.125$), depression ($F = 24.604$, $p < 0.001$, $\eta^2 = 0.096$), and fatigue knowledge ($F = 55.157$, $p < 0.001$, $\eta^2 = 0.192$).
Conclusion: The program was effective in reducing perceived fatigue as well as further outcomes.
Practice implications: This newly developed education program has the potential to fill a gap in the care of cancer survivors. The program needs further evaluation in other countries employing a control group of patients receiving equal time and attention as the intervention group.

Introduction

Cancer-related fatigue (CRF) is defined as a distressing persistent sense of tiredness or exhaustion related to cancer that is not proportional to recent activity and interferes with usual functioning (National Comprehensive Cancer Network, 2011). CRF is seen as a multidimensional symptom as it encompasses physical, mental and emotional aspects (Glaus et al., 1996). CRF is highly prevalent across the cancer continuum from diagnosis and treatment through survivorship and end of life. The prevalence of cancer-related fatigue ranged from 4% to 91%, depending on the population studied and the methods of assessment (Lawrence et al., 2004). Advances in diagnosis and treatment of malignancies have resulted in a growth of the number of cancer survivors. Thus, clinicians are being faced with a growing number of patients with CRF, even years after treatment.

There is a wide range of treatment options for CRF which can be classified into pharmacologic and nonpharmacologic interventions. Drug therapy for CRF is not well established yet. Hemopoietic growth factors have been suggested to treat CRF but can no longer be recommended due to safety issues (Minton et al., 2010). There is evidence for the use of psychostimulants to treat CRF (Minton et al., 2011). However, large scale trials to confirm these results are required.

Nonpharmacologic interventions focus on exercise and psychosocial interventions. In a meta-analysis, these interventions achieved an overall effect size of −0.341 ($p < 0.001$) (Kangas et al., 2008), with negative indices indicating less fatigue post-intervention. Exercise has been studied extensively, yielding an effect size in survivors of 0.31 (Brown et al., 2011). Psychosocial interventions may comprise psychoeducation, psychotherapy or social support; in a meta-analysis the pooled effect size was −0.313 (Kangas et al., 2008), whereas single trials resulted in effect sizes from 0.17 to 1.07 (Goedendorp et al., 2009).

Psychoeducation is common in psychosocial interventions and is recommended as a key strategy in CRF management (National Comprehensive Cancer Network, 2011). However, the efficacy of

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Table 1
Topics and methods of FIBS sessions.

Session	Title of session	Topics	Methods	Materials	Duration
1	Dimensions of fatigue	Against the background of their own symptom experiences, patients learn to differentiate between the physical, cognitive and emotional dimensions of fatigue.	Short lectures, moderated group discussions.	Overhead projector and transparencies, flip chart, materials for metaplan method, "mailbox" for anonymous communication, specialized patient diary, summary of the session.	90 min
2 (1 week after session 1)	Etiology and treatment of fatigue	Patients gain insight into the etiology of fatigue. Information about treatment options is given and discussed with the patients, taking into account the strength of evidence. The patients' subjective theories of disease are integrated into the discussion. Patients are encouraged to establish an exercise program.	Short lectures, moderated group discussions, home exercises.	Overhead projector and transparencies, flip chart, worksheets, "mailbox", sports brochures and training DVD, summary of the session.	90 min
3 (1 week after session 2)	Time and energy management	Patients learn to review their daily routines and structure their activities according to their energy levels, utilizing a patient diary.	Short lectures, moderated group discussions, individual tasks, behavioural training, home exercises.	Overhead projector and transparencies, flip chart, worksheets, "mailbox", specialized patient diary, summary of the session.	90 min
4 (1 week after session 3)	Healthy sleep and enjoyment	In the first part of the session, patients are informed about rules of sleep hygiene in order to establish healthy sleep-wake rhythms. In the second part, patients are trained positive self-reinforcement techniques to enhance enjoyment of life.	Short lectures, moderated group discussions, individual tasks, behavioural training, home exercises.	Overhead projector and transparencies, flip chart, worksheets, "mailbox", summary of the session.	90 min
5 (1 week after session 4)	Coping with emotions	Patients learn strategies to overcome depressive periods. Negative experiences in everyday life are reviewed and strategies to activate positive emotions are trained.	Short lectures, moderated group discussions, individual tasks, behavioral training, home exercises.	Overhead projector and transparencies, flip chart, worksheets, "mailbox", summary of the session.	90 min
6 (1 week after session 5)	Implementing new strategies	Patients discuss the use of resources to overcome barriers that may occur when implementing new strategies into everyday life.	Short lectures, moderated group discussions.	Overhead projector and transparencies, flip chart, worksheets, summary of the session.	90 min
Additional session 1 (3 months after session 6)	Exchanging experiences	Patients share their experiences with the program in everyday life.	Moderated group discussion.	–	90 min
Additional session 2 (6 months after session 6)	Exchanging experiences	Patients share their experiences with the program in everyday life.	Moderated group discussion.	–	90 min

IG = intervention group.
CG = wait-list control group.
SD = standard deviation.