

EVALUATION OF THE EFFECTS OF A TRAINING PROGRAMME FOR PATIENTS WITH PROLONGED FATIGUE ON PHYSIOLOGICAL PARAMETERS AND FATIGUE COMPLAINTS

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Abstract

Objectives: Complaints of prolonged fatigue are considered as a major health problem, as it can affect daily functioning and may lead to work disability. To increase knowledge about the effectiveness of interventions focussing on fatigued patients, a study was designed to evaluate an established training programme for patients with prolonged fatigue. **Materials and Methods:** Eighteen patients who reported fatigue to be one of their major health complaints and who were suffering from functional impairments attended a training programme of six weeks, three times a week. The training consisted mainly of physical endurance training, relaxation therapy and breathing exercises in rest. At baseline, time- and frequency-domain measures of heart rate variability (HRV) and respiration rate measurements were recorded during rest and during recovery after bicycle exercise. Furthermore, fatigue complaints were assessed with the Checklist Individual Strength (CIS). These measurements were repeated at three weeks and six weeks from baseline. **Results:** After three weeks, HRV increased significantly in rest — SDNN, i.e. standard deviation of normal beat-to-beat intervals ($p = 0.02$), very low frequency ($p = 0.04$) and low frequency ($p = 0.04$) — and showed a positive trend in the remaining HRV components. No significant HRV changes during recovery were found. Respiration rate decreased significantly after six weeks during rest (from 11.8, SD = 4.65 to 8.1, SD = 2.57 $b \times \text{min}^{-1}$) and during recovery (from 15.1, SD = 4.90 to 10.4, SD = 2.97 $b \times \text{min}^{-1}$). In all patients, CIS scores decreased after six weeks training (from 106, SD = 13.3 to 78, SD = 21.8, $p = 0.001$). **Conclusions:** The results suggest that a six-week training programme has a beneficial effect on physiological and subjective parameters in patients with severe complaints of fatigue.

Key words:

Autonomic nervous system, Heart rate variability, Physiological parameters, Prolonged fatigue, Training programme, Respiration rate

INTRODUCTION

Feelings of fatigue are common complaints among both the general and working population [1–3]. It is a normal phenomenon after physical or mental exertion that usually abates after a period of rest, when tasks are changed or when coping strategies are used [4,5]. Sometimes however,

feelings of fatigue persist. Unlike acute fatigue, prolonged fatigue is not task-specific, does not recover in short term and affects individual's work performance and activities of daily living. This may result in sick leave and/or work disability [6,7]. Compensation mechanisms (e.g. reducing activity) are not successful in this context, and they do not decrease the feeling of fatigue [4].

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