

ORIGINAL REPORT

EIGHT MONTHS OF PHYSICAL TRAINING IN WARM WATER IMPROVES
PHYSICAL AND MENTAL HEALTH IN WOMEN WITH FIBROMYALGIA:
A RANDOMIZED CONTROLLED TRIAL

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Objective: To evaluate the feasibility of 8 months of supervised exercise therapy in warm water and its effects on the impact of fibromyalgia on physical and mental health and physical fitness in affected women.

Methods: Thirty women with fibromyalgia were randomly assigned to an exercise therapy group ($n=15$) or a control group (inactive) ($n=15$). The impact of fibromyalgia on physical and mental health was assessed using the Fibromyalgia Impact Questionnaire and the anxiety state with State-Trait Anxiety Inventory. Physical fitness was measured using the following tests: Canadian Aerobic Fitness; hand-grip dynamometry; 10-metre walking; 10-step stair-climbing and blind 1-leg stance.

Results: After 8 months of training, the exercise therapy group improved compared with the control group in terms of physical function (20%), pain (8%), stiffness (53%), anxiety (41%), depression (27%), Fibromyalgia Impact Questionnaire total scores (18%), State-Trait Anxiety Inventory score (22%), aerobic capacity (22%), balance (30%), functional capacity for walking (6%), stair-climbing with no extra weight (14%) and stair-climbing 10 kg-weighted (25%).

Conclusion: Eight months of supervised exercise in warm water was feasible and led to long-term improvements in physical and mental health in patients with fibromyalgia at a similar magnitude to those of shorter therapy programmes.

Keywords: fibromyalgia, water, exercise, fitness, anxiety, depression.

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INTRODUCTION

Fibromyalgia (FM) is a rheumatic disorder characterized by muscle pain, poor physical condition and fatigue (1, 2). The condition is frequently associated with psychological stress,

high levels of anxiety and depressive status. Those symptoms have been treated effectively using physical exercise with low mechanical impact in water as well as on dry land (3–5).

Recent research into FM has focused on the effects of exercising exclusively in warm water, for a period of 12–24 weeks (6–8). The results have shown relevant improvements in the patients' physical condition and psychological status. In a previous study we showed that most of the gains in physical fitness and psychological stress achieved in 12 weeks of exercise tended to be lost after a subsequent similar period of physical inactivity (7). However, although water therapies may prove successful and result in improvements after a few weeks, the duration of the improvement remains very limited, and consequently, continued training is highly recommended.

Nevertheless, considering that previous experimental therapies in patients with FM lasted for a maximum of 24 weeks, knowledge of the effects and feasibility of extended water therapy in these patients is limited. This knowledge may be crucial for making decisions about the duration of aquatic therapy.

The aim of this study was therefore to evaluate the feasibility and effectiveness of 8 months of exercise training in warm water, 3 days per week, at a low, steady physical load.

SUBJECTS AND METHODS

Study sample

Participants were recruited by advertisements placed in the newsletters of a local FM association in Spain and the flow chart is described in Fig. 1. A total of 40 potentially eligible subjects responded and sought further information. The study protocol was explained, and 38 persons gave their written informed consent. Subjects were included if they met the diagnosis of FM according to the American College of Rheumatology (ACR) criteria (1). The following exclusion criteria were also applied: history of severe trauma; frequent migraines; peripheral nerve entrapment; inflammatory rheumatic diseases; severe psychiatric illness; other diseases that prevent physical loading and pregnancy; attendance at another psychological or physical therapy or regular physical exercise with more than one exercise session of 30 min per week during a 2-week period in the last 5 years. Five candidates were excluded due to attendance at other therapies. A final sample of 33 female patients, aged 37–71 years of age, intended to participate.