

Fibromyalgia reference list

1. Sabela RN et al. (2017) Effectiveness of Aquatic Therapy vs Land-based Therapy for Balance and Pain in Women with Fibromyalgia: a study protocol for a randomised controlled trial. *BMC Musculoskeletal Disorders* BMC series – open, inclusive and trusted 2017;18:22 <https://doi.org/10.1186/s12891-016-1364-5>

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BMC Musculoskeletal Disorders BMC series – open, inclusive and trusted 2017;18:22

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2.

Evciik, D., Yigit, I., Pusak, H. et al. **Effectiveness of aquatic therapy in the treatment of fibromyalgia syndrome: a randomized controlled open study** *Rheumatol Int* (2008) 28: 885. <https://doi.org/10.1007/s00296-008-0538-3>

The aim of this study was to investigate the efficacy of aquatic exercises in fibromyalgia syndrome (FMS). A total of 63 patients were included and allocated to two groups. Group I ($n = 33$) received an aquatic exercise program and Group II ($n = 30$) received a home-based exercise program for 60 min, 3× a week, over 5 weeks. Patients were evaluated for pain (visual analogue scale, VAS), number of tender points (NTP), Beck depression inventory (BDI), and functional capacity (fibromyalgia impact questionnaire, FIQ). All assessment parameters were measured at baseline, and at weeks 4, 12, and 24. There were statistically significant differences in FIQ and NTP in both groups at the end and during follow-up ($P < 0.05$). Group I showed a statistically significant decrease in BDI scores after 4 and 12 weeks ($P < 0.05$) that remained after 24 weeks ($P < 0.001$). In Group II, a significant decrease in BDI scores was observed at the end and during follow-up ($P < 0.001$). Also, a significant improvement was found in VAS at weeks 4 and 12 in both groups ($P < 0.001$). The average of reduction in pain scores was 40% in Group I and 21% in Group II. However, this was still significant at week 24 only in the aquatic therapy group. A comparison of the two groups showed no statistically significant difference for FIQ, NTP, and BDI scores except VAS ($P < 0.001$). Our results showed that both aquatic therapy

and home-based exercise programs have beneficial effects on FIQ, BDI, and NTP. In pain management, only aquatic therapy seems to have long-term effects.

3.

Archives of Physical Medicine and Rehabilitation
Volume 89, Issue 12, December 2008, Pages 2250-2257



Original article

Assessment of the Effects of Aquatic Therapy on Global Symptomatology in Patients With Fibromyalgia Syndrome: A Randomized Controlled Trial

Author links open overlay panel [Diego Munguía-Izquierdo PhD](#) [Alejandro Legaz-Arrese PhD](#)^b

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Abstract

Munguía-Izquierdo D, Legaz-Arrese A. Assessment of the effects of [aquatic therapy](#) on global [symptomatology](#) in patients with [fibromyalgia](#) syndrome: a randomized controlled trial.

Objectives

To evaluate the effects of a 16-week [exercise therapy](#) in a chest-high pool of [warm water](#) through applicable tests in the clinical practice on the global symptomatology of women with fibromyalgia (FM) and to determine exercise adherence levels.

Design

A randomized controlled trial.

Setting

Testing and [training](#) were completed at the university.

Participants

Middle-aged women with FM (n=60) and healthy women (n=25).

Intervention

A 16-week aquatic training program, including [strength training](#), [aerobic training](#), and relaxation exercises.

Main Outcome Measures

Tender point count (syringe calibrated), [health status](#) (Fibromyalgia Impact Questionnaire); [sleep quality](#) (Pittsburgh Sleep Quality Index); [physical \(endurance strength to low loads tests\)](#), [psychologic](#) (State Anxiety Inventory), and [cognitive function](#) (Paced Auditory Serial Addition Task); and adherence 12 months after the completion of the study.

Results

For all the measurements, the patients showed significant deficiencies compared with the healthy subjects. Efficacy analysis (n=29) and intent-to-treat analysis (n=34) of the exercise therapy was effective in decreasing the tender point count and improving sleep quality, cognitive function, and physical function. Anxiety remained unchanged during the [follow-up](#). The exercise group had a significant improvement of health status, not associated exclusively with the exercise intervention. There were no changes in the control group. Twenty-three patients in the exercise group were exercising regularly 12 months after completing the program.

Conclusions

An exercise therapy 3 times a week for 16 weeks in a warm pool could improve most of the symptoms of FM and cause a high adherence to exercise in unfit women with heightened FM symptomatology. The [therapeutic](#) intervention's effects can be assessed through applicable tests in the clinical practice

4. Martin DG. Et al. (2018) Levels of brain-derived neurotrophic factor in patients with fibromyalgia and chronic low back pain: Results of an aquatic physical therapy protocol. FACETS | 2018 | 3: 12–21 | DOI: 10.1139/facets-2017-0016 15

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[Cochrane Database of Systematic Reviews](#)

Aquatic exercise training for fibromyalgia

Cochrane Systematic Review - Intervention Version published: 28 October 2014 [see what's new](#)



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6.

[Sevimli D, Kozanoglu E, Guzel R, Doganay A \(2015\)](#)

The effects of aquatic, isometric strength-stretching and aerobic exercise on physical and psychological parameters of female patients with fibromyalgia syndrome. **J. Phys. Ther. Sci.**27: 1781–1786, 2015

Original Article

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著者情報

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[DOI](https://doi.org/10.1589/jpts.27.1781) <https://doi.org/10.1589/jpts.27.1781>

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抄録

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抄録

[Purpose] There are various treatment modalities for fibromyalgia syndrome (FMS), which is characterized by widespread pain and fatigue. The aim of this study was to investigate the effects of aquatic, aerobic and isometric strength-stretching exercises on the physical and psychological parameters of patients with FMS. [Subjects and Methods] Seventy five female patients with FMS were randomly selected and divided into three groups. Patients (18–50 years) were treated for 3 months using one of three methods: a home-based isometric strength and stretching exercise program (ISSEP), a gym-based aerobic exercise program (AEP), and a pool-based aquatic aerobic exercise program (AAEP). Items evaluated were: the number of tender points, Visual Analog Scale (VAS), Fibromyalgia Impact Questionnaire (FIQ), the Six-Minute Walk Test (6MWT), SF-36 physical and mental health scores, and the Beck Depression Inventory (BDI). [Results] The results revealed that AAEP was the most effective treatment of the three. All of the groups showed significant improvements in all variables between pre-and post-test, except the mean values of VAS and BDI in ISSEP. [Conclusion] The results suggest that aquatic aerobic exercise program is more effective than AEP and ISSEP in the treatment of FMS.

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7.

Therapeutic benefit of balneotherapy and hydrotherapy in the management of fibromyalgia syndrome: a qualitative systematic review and meta-analysis of randomized controlled trials

- Johannes Naumann^{†1}[Email author](#) and
- Catharina Sadaghiani^{†1}

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1. Bidonde J et al. [Cochrane Database of Systematic Reviews](#). Aquatic exercise training for fibromyalgia Cochrane Systematic Review - Intervention Version published: 28 October 2014
2. [Sevimli D, Kozanoglu E, Guzel R, Doganay A \(2015\)](#) The effects of aquatic, isometric strength-stretching and aerobic exercise on physical and psychological parameters of female patients with fibromyalgia syndrome. **J. Phys. Ther. Sci.** **27**: 1781–1786, 2015
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