**Available online** http://arthritis-research.com/content/10/1/R24

Research article

Open Access

# Cost-utility of an 8-month aquatic training for women with fibromyalgia: a randomized controlled trial

Narcís Gusi[1] and Pablo Tomas-Carus[2]

[1]Faculty of Sports Sciences, University of Extremadura, Avda. Universidad s/n, 10071 Cáceres, Spain
[2]Department of Sport and Health. University of Évora, Rua de Reguengos de Monsaraz, No. 44, 7000-727 Évora, Portugal

Corresponding author: Narcís Gusi, ngusi@unex.es

Received: 30 Sep 2007 Revisions requested: 14 Nov 2007 Revisions received: 7 Dec 2007 Accepted: 22 Feb 2008 Published: 22 Feb 2008

*Arthritis Research & Therapy* 2008, **10**:R24 (doi:10.1186/ar2377)
This article is online at: http://arthritis-research.com/content/10/1/R24


## Abstract

**Introduction** Physical therapy in warm water has been effective and highly recommended for persons with fibromyalgia, but its efficiency remains largely unknown. Should patients or health care managers invest in this therapy? The aim of the current study was to assess the cost-utility of adding an aquatic exercise programme to the usual care of women with fibromyalgia.

**Methods** Costs to the health care system and to society were considered in this study that included 33 participants, randomly assigned to the experimental group ($n = 17$) or a control group ($n = 16$). The intervention in the experimental group consisted of a 1-h, supervised, water-based exercise sessions, three times per week for 8 months. The main outcome measures were the health care costs and the number of quality-adjusted life-years (QALYs) using the time trade-off elicitation technique from the EuroQol EQ-5D instrument. Sensitivity analyses were performed for variations in staff salary, number of women attending sessions and time spent going to the pool. The cost effectiveness acceptability curves were created using a non-parametric bootstrap technique.

**Results** The mean incremental treatment costs exceeded those for usual care per patient by € 517 for health care costs and € 1,032 for societal costs. The mean incremental QALY associated with the intervention was 0.131 (95% CI: 0.011 to 0.290). Each QALY gained in association with the exercise programme cost an additional € 3,947/QALY (95% CI: 1,782 to 47,000) for a health care perspective and € 7,878/QALY (3,559 to 93,818) from a societal perspective. The curves showed a 95% probability that the addition of the water-based programme is a cost-effective strategy if the ceiling of inversion is € 14,200/QALY from a health care perspective and € 28,300/QALY from a societal perspective.

**Conclusion** The addition of an aquatic exercise programme to the usual care regime for fibromyalgia in women is cost effective in terms of both health care costs and societal costs. However, the characteristics of facilities (distance from the patients' homes and number of patients that can be accommodated per session) are major determinants to consider before investing in such a programme.

**Trial registration** Current controlled trials ISRCTN53367487.

## Introduction

Fibromyalgia (FM) is a chronic disorder of widespread pain in combination with tenderness of at least 11 of 18 specific tender points [1]. FM affects approximately 2–3% of the general population, and more than 90% of patients are female [2-4]. The average yearly cost (updated to 2005 using a 5% annual inflation) for service utilization among patients with FM is approximately € 4,500, and the societal cost is € 8,960 [5]. These costs are largely due to the frequent use of medical services such as consultations (approximately 10 per year) and medication, and the health system and societal expenses of disability from work [2,3]. Patients with FM consume health care resources to a similar extent as patients with other chronic diseases such as diabetes mellitus and hypertension [6]. Patients with FM also incur about twice the health care costs as the general population [7], and are absent from work approximately twice as much as other employees [8].

Studies reported in scientific literature have demonstrated evidence of the benefits of physical therapy on health-related quality of life and fitness [9,10]. In particular, physical exercise in warm water has been effective in short-term programmes (less than 6 months) and is highly recommended to reduce pain and minimize mechanical impact during exercise [11-15]. However, in our earlier study of patients with FM we found that most of the gains in health-related quality of life and physical fitness achieved in 12 weeks of water-based exercise were lost after a subsequent similar period of physical inactivity