

A pilot study to evaluate the effects of floatation spa treatment on patients with osteoarthritis

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SUMMARY. Objective: To conduct a preliminary investigation of the effects on floatation spa therapy on quality of life in patients with osteoarthritis to see if controlled trials are warranted. Design: Uncontrolled clinical trial. Setting: Private floatation spa therapy centre. Patients: Fourteen patients with chronic osteoarthritis of the weight-bearing joints, of whom four dropped out. Intervention: Six weekly sessions of floatation spa therapy. Outcome measures: SF36, AIMS2 and MYMOP quality-of-life questionnaires. Main results: All patients improved. Differences between baseline and discharge scores showed statistically significant improvement for MYMOP, but not AIMS2 or SF-36. Conclusions: Controlled trials of floatation spa therapy for patients with osteoarthritis are warranted. © 1999 Harcourt Publishers Ltd

INTRODUCTION

People suffering from arthritis, an often debilitating disease, have traditionally sought relief from natural spas world-wide.¹⁻⁵

Balneotherapy or spa therapy can be defined as bathing in thermal waters, which may also be mineralized. Spas became popular for the treatment of orthopaedic conditions during the Roman era but fell into decline this century in the UK and are only recently enjoying a renewed interest. However, in parts of Europe and Israel, spa therapy has remained a popular treatment for sufferers of arthritis. In Israel, the Dead Sea is so dense that people have the added experience of floating in the water.¹ Historically, the therapeutic value and indications of thermal spring waters have been linked to its composition and mineral concentration as well as to the temperature of the water. Different spas were recommended for different conditions depending on whether the water was sulphurous, bicarbonate, sodium chloride or bicarbonate chloride, etc. All spas, however, were recommended for rheumatological conditions.^{2,4}

Research that has taken place into the effects of Spa therapies, has shown that 3 weeks spent at a spa resort may have some short- and long-term therapeutic effects.¹⁻⁴

Floatation spa therapy is a modern variant of spa therapy. It differs from traditional therapy in the following ways:

1. The operator controls the composition of salts and the type of salts used and the temperature of the water.
2. The density of the salts-to-water ratio ensures that the user will float effortlessly.
3. The presence or absence of lighting and music may enhance deep relaxation.
4. Restricted environmental stimulation therapy (REST) can be used.⁶
5. The floatation pool is set in a room that will offer the patient complete privacy or the potential for individual physiotherapy assistance.
6. The combination of these factors would seem to facilitate the potential for unique therapeutic experiences.

It has been recognized that spa therapy may have the potential to encourage self-efficacy and self-advocacy and that the environmental and cultural experience can be enriching in itself. The patient may also enjoy being pro-active in the treatment of their condition.⁷

These factors might also be possible with floatation spa therapy, enabling this therapy to be sited alongside existing traditional spa facilities or alternatively in a situation where natural spa facilities are inaccessible. Floatation spa pools have only recently become available, making it possible to install them in a broad spectrum of environments, including hospitals and nursing homes.

Floatation spa therapy involves lying in a pool 2.4 m × 1.2 m filled with a 250 mm depth of water heated to body temperature, so densely saturated with magnesium sulphate (Epsom salt) that floating is effortless. As well as the benefits of traditional spas and hydrotherapy, there are the additional advantages of weightlessness, and the benefits of REST, the possible induction of very deep relaxation.^{6,8} REST has shown that floating in complete darkness can often enhance the depth of relaxation gained by the patient. The option of light or darkness is under the control of the patient.

Hydrotherapy is widely used and acknowledged to be a useful intervention therapy in the management of arthritis. In a recent randomized controlled trial of hydrotherapy in rheumatoid arthritis (RA), 139 people with chronic RA were randomly assigned to hydrotherapy, seated immersion, land exercise or progressive relaxation. The author concluded that all patients experienced some benefit, but hydrotherapy produced the greatest improvements.⁹

Surveys carried out in several North American rheumatology clinics have found that between 66% and 94% of the patients use complementary medicine.¹⁰⁻¹² A UK study reported that, out of 1020 arthritis sufferers who completed an arthritis questionnaire, one-third had visited a complementary practitioner.¹⁰ This pilot study aims to assess the effects of floatation spa therapy on quality-of-life in patients with osteoarthritis (OA).

METHODS

Patients and setting

Following an open day and placing of articles in local papers, an appeal was launched for people suffering with OA of weight-bearing joints to come forward. The request was for people who were able and willing to fund themselves for six subsidized treatment sessions in a floatation pool. Ethical approval was sought and granted by Exeter Ethics committee. The inclusion criterion was a General Practitioner's diagnosis of osteoarthritis of the weight-bearing joints.

The exclusion criteria were as follows: epilepsy, infectious diseases, open wounds, incontinence and any practical problems of getting patients in or out of the floatation pool.

Treatment

Patients received a series of six treatment sessions at approximately 1-week intervals. Treatments took

place at a centre in Devon, which has an established floatation pool. The pool is situated in a small well-heated room, is heated to body temperature and contains approximately 400 kg of Epsom salts to 675 litres of water. The density of the solution allows the patient to float effortlessly with the face and upper body out of the water. The décor of the room is aesthetically conducive to the enhancement of relaxation. Lighting can be subdued or eliminated under the control of the patient. Music was piped through underwater speakers at the patient's request. Assistance was always at hand if required.

Data collection

The Measure Yourself Medical Outcome Profile (MYMOP)¹³ was completed before each treatment. The AIMS 2 Arthritis Questionnaire¹⁴ and the Short Form SF-36¹⁵ were completed before and after six treatment sessions.

Statistical analysis

Final scores were obtained by custom-designed programmes written by the Department of Complementary Medicine at Exeter University. The significance of differences in means for before and after treatments were assessed by paired *t*-tests. All *P*-values are two-tailed. All analyses were performed using SPSS for windows (Version 6.1 SPSS, Chicago).

RESULTS

Fourteen people applied to take part in the pilot study and ten completed the course. Of the four patients who did not complete the study, one person felt discomfort from a neurological condition during the session, another patient experienced benefits, but was advised by her GP that a previous ulcerative condition could return. One patient felt relief and decided not to complete the remaining four treatments. The fourth patient experienced anxiety during the floatation session.

The characteristics of the ten people who completed the study are shown in Table 1. The patient group was predominantly female, with an average age of 71. Time since diagnosis of osteoarthritis was an average of 18 years.

The SF36 scores, the AIMS2 (Five-component) scores and the MYMOP scores all showed a trend towards improvement (Table 2).

DISCUSSION

The pilot study aimed to investigate whether floatation spa therapy could be a useful treatment for sufferers of osteoarthritis of weight-bearing joints. This was in order to provide a necessary background for

	Age (yrs)	Sex	Retired/ working	Time from diagnosis of OA (yrs)	Main symptom
<i>Patient</i>					
1	62	M	R	30	Hip
2	64	F	W	2	Hip
3	60	F	R	10	Lower back
4	79	F	R	41	Knee
5	62	M	R	12	Lower back
6	64	F	R	15	Hip
7	74	F	R	10	Hip
8	74	F	R	23	Knee
9	85	F	R	25	Lower back
10	84	F	R	8	Hip

	Score before therapy Mean(SD)	Score after therapy Mean(SD)	Change in score	P-value
<i>SF36</i>				
Physical functioning	40.5 (23.7)	44.0 (25.3)	3.50	0.643
Role – physical	17.5 (26.5)	35.0 (33.7)	17.50	0.209
Bodily pain	37.7 (16.2)	46.5 (16.6)	8.80	0.224
General health	57.0 (22.2)	61.2 (19.3)	4.20	0.271
Vitality	42.5 (16.2)	50.5 (13.8)	8.00	0.145
Social functioning	75.0 (25.0)	70.0 (28.4)	-5.00	0.545
Role – emotional	63.3 (42.9)	83.3 (23.6)	20.00	0.140
Mental health	70.8 (17.8)	80.0 (14.1)	9.20	0.119
<i>AIMS2</i>				
Physical	22.18 (12.85)	20.64 (11.73)	1.54	0.425
Affect	8.90 (3.02)	8.55 (2.85)	0.35	0.800
Symptom	7.05 (2.09)	6.20 (2.24)	0.85	0.209
Social interaction	8.60 (2.91)	8.40 (2.25)	0.20	0.777
Role	–	–	–	–
<i>MYMOP</i>				
Symptom1	4.85 (0.94)	2.30 (1.69)	2.55	0.003
Symptom2	4.25 (1.14)	1.50 (1.08)	2.75	0.000
Activity	5.15 (0.94)	2.65 (1.70)	2.50	0.001
Well-being	3.45 (1.57)	1.60 (1.08)	1.85	0.002
Profile	4.42 (0.76)	2.01 (1.15)	2.41	0.000

'Change in score' – a positive change is a clinical improvement.

further research. Although the number of participants in the study was small, all patients in this pilot study showed improvement. The pilot study indicated that overall there were some positive effects of six sessions of floatation spa therapy.

The AIMS 2 and the SF-36 showed a trend to improvement and the results of the MYMOP showed statistically significant positive changes. Three patients linked their ability to resume tasks they were unable to perform before the floatation spa therapy, such as knitting and sewing, to the increased flexibility gained during their six sessions.

Previous research has suggested that traditional spa therapy can provide a useful treatment method for some sufferers with arthritis, but this facility is only available to those who can travel to spa resorts. Floatation spa therapy might be made more widely available.

Each of the patients that took part in the trial had been suffering with OA for a great number of years, the average being 18 years. Most of the patients had no previous knowledge of floatation spa therapy and only became aware of it because of the study. As the pilot study received no financial support, the patients were a self-selected sample. This would occur in a controlled trial. Very careful consideration was given to the choice of questionnaires to be used. The SF36 and the AIMS2 are well used and well accepted in arthritis research studies. However, it was considered important to select a questionnaire that would enable the patient to record the criteria that were important to him or her. MYMOP was selected, as the outcome measures are based on the patients' individual concerns and enable the patient to measure their progress. MYMOP showed the greatest responsiveness in the current study.

The current study is limited by the small number of patients and the lack of a control group. Further controlled studies with larger numbers of patients are recommended. A possible study design for future research would be a randomized controlled, evaluator-blind, three-armed clinical trial: one standard treatment regimen (physiotherapy), the intervention under study (floatation spa therapy) and a combination of both. The questionnaires that would be used would be reconsidered with the possible use of the WOMAC and visual analogue pain scorer. Patients would be possibly on a waiting list for joint replacement operations and most certainly on a waiting list for physiotherapy.

In conclusion, the results of this pilot study are sufficiently positive to warrant further, more definitive research.

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