



## Preliminary experience with dance movement therapy in patients with chronic fatigue syndrome

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### ABSTRACT

To evaluate the influence of dance movement therapy (DMT) on the perception of well-being and functional capacity in women with chronic fatigue syndrome (CFS). Previous studies have analysed the effects of DMT in fibromyalgia but not specifically in CFS. Seven women diagnosed with CFS attended a 4-month DMT program. All of them performed a maximal physical test before and after the DMT intervention. Their perceptions of physical and psychological well-being were evaluated with a continuous visual scale. After each session all the patients were asked to write a report at home about their impressions and feelings. Dance movement therapy had a positive effect, both qualitatively and quantitatively, on patients' perceptions of well-being. There were no significant changes in performance on the physical test. Comparing perceptions before and after each session, the perceptions of physical well-being improved by an average of 25.8% and perceptions of psychological well-being by 22.7%. Although we did not demonstrate an improvement in functional capacity, women with CFS reported improvements in their perceptions of physical and psychological well-being after DMT program. A larger sample is required to assess the possibilities of DMT with CFS in greater depth.

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### Introduction

Chronic fatigue syndrome (CFS) is a clinical entity characterized by disabling fatigue of at least 6 months' duration and a series of symptoms that include musculoskeletal pain, neurocognitive disorders, sleep disturbance and intolerance physical exercise (Fukuda et al., 1994; Niloofar & Buchwald, 2003; Prins, Van der Meer & Bleijenberg, 2006). CFS is identified in around 0.5% of patients attending general practice (Jason et al., 1999; Reyes et al., 2003; Wessely, Chalder, Hirsch, Wallace, & Wright, 1996).

Patients with CFS may have a number of associated comorbidities that worsen their quality of life, such as dry syndrome, irritable bowel syndrome, autonomic dysfunction and particularly fibromyalgia (FM), which has a large impact on the family environment and self-rated health (Åsbring & Närvänen, 2002; Ubago et al., 2008).

Both CFS and FM can lead to considerable difficulties in performing daily activities. The limitations can be even greater than those experienced by other patients who suffer chronic pain from other diseases (Boonen et al., 2005; Fernández, 2000). The prognosis for functional capacity in CFS patients is poor and is

a major constraint on physical and intellectual activity, causing deterioration and disability in working, personal, and social life (Cervera et al., 2005). Although cognitive behavioral therapy (Prins et al., 2001) and regular exercise (Karper & Stasik, 2003) have proved beneficial, no effective treatment is available at present.

The growing number of studies on the importance of therapy through movement and dance suggest that approaches of this kind may improve the overall condition of the patient (Aktas & Ogce, 2005; Hanna, 1995; Sandel et al., 2005). Dance movement therapy (DMT) promotes the psychophysical integration of the individual (Stanton-Jones, 1992). In DMT, the therapist creates a supportive environment where feelings can be expressed, recognized, and communicated securely (Payne, 1992).

Dance can improve quality of life by strengthening the immune system through muscular action and through the activation of various physiological responses. It can also eliminate tension, chronic fatigue, and other disabling conditions resulting from stress situations (Ginsburgs & Goodill, 2009; Sandel et al., 2005). One of the therapeutic aspects of DMT is the act of creating movement through improvisation. This is inherently therapeutic, since it allows the individual to experience original new ways of movement and generates a new experience of being in the world (Diamond, 2001). The important thing is to experiment with the body more freely and fully, to explore new ways of being and to gain access to feelings that cannot be verbalized (Stanton-Jones, 1992).

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Certain studies have evaluated the effects of DMT on the pathological evolution of FM, with positive results. Dance movement therapy gives patients an opportunity to work on body awareness tasks and to focus on body perception (Bojner-Horwitz, Theorell & Anderberg, 2003; Horwitz, Kowalski, Theorell, & Anderberg, 2006). Developing the expressive capacity of patients with FM through the body and through non-verbal communication can help them to become aware of emotions and maladaptive mechanisms (Rodríguez-Cigaran, 2005).

In 2008, the only study reported with CFS and art therapy showed that art-making increased subjective well-being, increasing satisfaction in daily life, and boosting positive self-image, hope and contact with the outside world (Reynolds, Vivat & Prior, 2008).

Given the properties of dance and movement and their usefulness with chronic symptoms such as pain and fatigue, we propose that DMT may be successfully applied in patients with CFS. The study presented here is the first published to date on this topic.

The objectives of our intervention with DMT in women with CFS were:

- 1 To determine whether DMT correlates with physical and psychological well-being in CFS patients.
- 2 To evaluate patients' written reports and the therapist's notes after each session.
- 3 To establish whether DMT correlates with physiological responses at rest, at a very low intensity effort, and at maximum intensity effort in CFS patients.

## Methodology

Ten women with diagnoses of CFS of at least 1 year, by Holmes and Fukuda criteria (Fukuda et al., 1994; Holmes, Kaplan, & Schonberger, 1993), aged between 35 and 55 years were recruited randomly from the Unit of Physiology of the Department of Physiological Sciences II at the University of Barcelona. All had been diagnosed by two different specialists and gave oral and written consent to participate in the study. Patients with major depression were excluded.

Three of the 10 women were unable to attend the sessions, either for health reasons or because of transport difficulties.

### Data collection

Our approach combined quantitative and qualitative methods (Cruz & Berrol, 2004):

- (1) Qualitative data were gathered from two sources
  - A Written reports from the patients after each DMT session.
  - B Written reports on the oral feedback of the patients during the sessions. The therapist also took notes on her impressions after each session.
- (2) The quantitative aspects examined were
  - A Physical performance. All the patients performed a maximal physical test using a cycle ergometer, accompanied by monitoring of cardiopulmonary response to evaluate their state before and after the DMT program. In general, the physical test with cardiovascular monitoring can assess the maximum oxygen consumption peak, considered a reference value so as to determine the functional capacity of a given patient.

Exercise testing was done in the laboratory of the Department of Physiological Sciences II at a room temperature of 22–24 °C and a relative physical humidity of 55–65%. Subjects were instructed not to perform any intensive physical activity during the 72 h prior

to testing. All the tests were conducted in the morning after a light breakfast, a week before the start of the DMT program and a week after the end.

The patients were tested to evaluate their physiological cardiovascular adaptation at standard effort intensity (Ainsworth et al., 2000) during a 4-min period in resting conditions and on a precalibrated cycle ergometer (Excalibur, Lode, Groningen, The Netherlands) performing physical exertion at 0W for 4', approximately at 2 METS/h of intensity. After this period, they followed a progressive exercise schedule which increased in ramp by 20W every minute up to exhaustion; this was the maximal test.

O<sub>2</sub> uptake (VO<sub>2</sub>) and CO<sub>2</sub> production (VCO<sub>2</sub>) were measured by an automatic gas analysis system (Metasys TR-plus, Brainware SA, La Valette, France) equipped with a pneumotachograph and using a two-way mask (Hans Rudolph, Kansas, USA). Heart rate (HR) was monitored continuously using a pulsometer (Polar Accurex Plus, Polar Electro OY, Finland). Arm blood pressure (BP) was taken manually using a clinical sphygmomanometer.

The rating of perceived exertion (RPE) (Borg & Kaijser, 2006) was recorded at rest, during very low intensity effort and during the maximal workload.

B – Perception of physical and psychological well-being. Physical and psychological states were evaluated on a continuous visual scale before and after each DMT session. This scale consisted of a 30 cm line drawn on a card on which patients indicated with their finger how they felt, with 0 being the lowest value (unwell) and 30 cm the highest one (very well). The point marked was measured with a ruler by the therapist and recorded in cm for later analysis. Centimeters were not marked on the line to avoid habituation in the self-assessment of patients.

### Intervention

The patients attended a 4-month group DMT program with one 1-h session per week.

During these 4 months, individual sessions were also scheduled to allow the therapist to observe each patient and her characteristic movements in more detail.

The sessions were held in a new, spacious, well-lit room dedicated exclusively to the DMT program and with all the equipment necessary (balls, mats, chairs, etc). Having a stable space for DMT meetings is known to be important to the patients (Panhofer, 2005).

All sessions followed the same sequence: warm-up, daily objective (body image, sensoriality, creativity, etc), relaxation and group feedback. When patients shared their experiences orally at the end of the meeting, it was emphasized that they should speak in the first person and not judge, and interaction between the members of the group was encouraged (Carvajal-Pérez, 2008).

After each session, all the patients were asked to write a report at home about their impressions, feelings, and thoughts. Music was used in every session, and in some of them patients had the opportunity to choose the music genre.

"The objectives of the sessions were:

- 1 To help the patients become aware of the body beyond fatigue and illness, to reduce somatic stress and to recognize, accept and activate psychosomatic unity and the changes it undergoes (the physical and psychological symptoms of CFS) (body image).
- 2 To strengthen the resources of the patient's body: agility, flexibility, body control, spatial boundaries and their uses (sensoriality).
- 3 To find new ways to communicate through body language, exploring through dance and music the ability to connect and communicate with the body and the environment, creating a new space for pleasure (creativity).

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