Hypnotic Treatment Synergizes the Psychological Treatment of Fibromyalgia: A Pilot Study*

Consuelo Martínez-Valero¹, Antonio Castel², Antonio Capafons³, José Sala², Begoña Espejo³, & Etzel Cardeña⁴

Abstract

In this pilot study, we compare the efficacy for fibromyalgia of multimodal cognitive behavioral treatments, with and without hypnosis, with that of a purely pharmacological approach, with a multiple baseline \( N = 1 \) design. We randomly assigned six hospital patients to the three experimental conditions. The results suggest that psychological treatment produces greater symptom benefits than the conventional medical treatment only, especially when hypnosis is added. We conclude that hypnosis may be a useful tool to help people with fibromyalgia manage their symptomatology.

Keywords: Fibromyalgia, hypnosis, pain, cognitive behavioral treatment.

Fibromyalgia is a chronic pain disorder of unknown medical etiology, characterized by diffuse muscle pain of more than 3 months of duration accompanied by abnormal sensitivity to digital pressure in 11 of 18 sensitive points in specific anatomical areas (Wolfe et al., 1990). The pain cannot be explained by degenerative or inflammatory processes and the laboratory tests are normal.

Fibromyalgia is present throughout the world. Although it is not common among them, it also affects children and its prevalence increases with age. In the United States between 3-5% of the women and 1-2% of men suffer from fibromyalgia; in England, Australia, Italy, Israel, and Mexico the prevalence is similar (Goldenberg, 2002). According to the Spanish Society of Reumatology (2001), the prevalence among Spaniards older than 20 years is 0.2% among men and 4.2% among women. According to this Society, 10-20% of reumatology and 5-7% of primary care...
Hypnotic Treatment and Fibromyalgia

conferences are devoted to fibromyalgia. It is the most frequent cause of generalized and chronic muscle pain, which impairs restful sleep and increases fatigue and morning muscular rigidity. Sufferers use medication excessively, reduce physical exercise and social activities, and perceive the pain as something horrible and intolerable (Camacho, 1999).

Fibromyalgia has a negative impact on the quality of life and requires learning how to manage it to accomplish the necessary adjustments in the life of the patient (familial, social, occupational, etc.). Because of this, the therapeutic approach to fibromyalgia has to be multidisciplinary. Purely pharmacological interventions are insufficient and it is advisable to combine them with other types of treatments (Alarcón & Bradley, 1998; Marder et al., 1991). Various studies support a cognitive behavioral approach as the most effective for fibromyalgia (Nicassio et al., 1997; Nielsen, Walker, & McCain, 1992; Pastor et al., 2003; Vlaeyen et al., 1996; White & Nielson, 1995). This approach emphasizes the clients’ active self-control over the symptoms to improve quality of life. A dissertation (Rosenberg, 2005) reported good results on a juvenile fibromyalgia sample using “hypnosis/relaxation” within cognitive-behavioral therapy (CBT), but did not assess whether hypnosis improved the efficacy of CBT.

The main symptom of fibromyalgia is pain. There is good evidence that hypnosis is effective for the management of chronic and acute pain (Montgomery, DuHamel, & Redd, 2000; Montgomery & Schnur, 2004; Patterson & Jensen, 2003), and that it increases the impact of cognitive-behavioral interventions (Schoenberger, 2000). Three studies have found that hypnosis decreased reports of pain among fibromyalgia patients (Castel, Pérez, Sala, Padrol, & Rull, 2007; Haanen et al., 1991; Wik, Fischer, Bragé, Finer, & Fredrikson, 1999). Castel and collaborators (2007) found that hypnosis with specific suggestions for analgesia was a more effective treatment than hypnosis with general relaxation or with progressive relaxation, especially for the sensory aspect of pain. Two studies have reported changes in electrocortical activity associated with (successful) hypnotic treatment for fibromyalgia, one measuring changes in blood flow through PET (Wik et al., 1999), the other with cerebral perfusion measured through SPECT (Sala, Añez, Bueno, & Ciurana, 2001).

A study by Haanen and collaborators (1991) compared a group receiving hypnotherapy with another exposed to physical therapy, with the treatment lasting 12 weeks and a follow-up at 24 weeks. The hypnotic treatment included various hypnotic suggestions and patients were also provided a self-hypnosis tape with the same suggestions. Physical therapy involved massage and training in relaxation. The hypnosis group reported significant improvements with respect to pain perception, fatigue upon awakening, sleep pattern, reduction of analgesics, and overall effect, but there was no difference between treatments when muscle pain was evaluated through a pain gauge. There is also evidence that hypnotic suggestions can enhance self-esteem (Cardeña, Dorch, & Lundborg, 2007), which can be a problem among fibromyalgia patients.

The studies reviewed suggest that hypnosis can improve the efficiency and/ or efficacy of the psychological treatments of fibromyalgia, with hypnosis being a promising intervention. The use of hypnosis as a therapeutic adjunct in our study was framed within a cognitive-behavioral perspective (Capafons, 1998a; 2001), where hypnosis is presented as a technique that uses psychological resources to encourage self-control, lacks major risks, and requires the collaboration and active participation of the person. We used the waking hypnosis model of Capafons (1999, 2001, 2004), especially Rapid Self-Hypnosis (Capafons, 1998 a, b; Martínez-Tendero, Capafons, Weber, & Cardeña, 2001; Reig, Capafons, Bayot, & Bustillo, 2001).

The objective of our study was to compare the efficiency of medical-psychological treatment, with and without hypnosis, with a purely medical treatment, and to determine the impact of waking hypnosis within the psychological treatment. This was an exploratory study.
with two individuals in each group, with the purpose of evaluating whether a more ambitious project should be undertaken. Our research hypotheses were:

1. Because fibromyalgia requires new skills to manage the symptoms and cognitive-behavioral and hypnosis treatments foster self-control, we predicted that a psychological treatment that includes cognitive, behavioral and educational techniques would decrease symptoms as compared with a purely pharmacological treatment.

2. Because hypnosis increases the efficacy of cognitive-behavioral (Schoenberger, 2000) and other treatments (Kirsch, Capafons, Cardena, & Amigó, 1999), and waking hypnosis increases treatment motivation and expectations of treatment success and self-control (Capafons, 2001), we predicted that adding hypnosis would be better than a cognitive-behavioral treatment with relaxation as a substitute for hypnosis.

**Methods**

**Participants**
Overall sample age was 44.3 years (range 25-60); 39.5 (ages 32-47) for the control (C, medical treatment only) group, 57 (ages 54-60) for the cognitive-behavioral-hypnosis group (CBH), and 36.5 (ages 25-48) for the cognitive behavioral group (CB). All participants were married women, with one (C) currently separated. The average span since diagnosis was 4 years for all participants (CBH = 4.5, range 1-8; CB = 5, range 3-7; C = 2.5, range 3-2). The C group consisted of a lawyer and a high school graduate; the CBH of two individuals who had finished elementary school, and the CB group of an elementary school and a technical school graduates.

**Instruments**
The dependent variables reported in this article are: a) symptoms of pain, fatigue, muscular rigidity upon awakening, sleep quality, and number of sensitive points; b) impact of fibromyalgia on participants’ lives; and c) beliefs and perception about pain. Other variables measured in the study (perception of life quality related to health, self-esteem, pain coping strategies, and attitudes towards hypnosis), overall consistent with the results reported here, are not included in this paper for the sake of clarity. We report here on the following:

*Pain and Beliefs Perception Inventory (PBPI)* (Williams & Thorn, 1989), whose 16 items evaluate patients’ beliefs about their pain according to four subscales: pain stability, ignorance about pain, self-blame, and lack of chronicity. The PBPI has good psychometric properties (Morley & Wilkinson, 1995).

*Fibromyalgia Impact Questionaire (FIQ)* (Burckhardt, Clark & Bennett, 1991; De Gracia, Marcó, Ruiz, & Garabieta, 2001), measures the physical, psychological, social, and global impact of fibromyalgia.

*Plates Coop/Wonca*, consisting of 7 scales that measure physical shape, emotional states, daily activities, changes in health, social activities, health status, and pain, as modified by the World Organization of Family Doctors (Wonca, 1988). These scales indicate if there is change across time (Lizán & Reig, 2002).

**Numerical Scales:** The patient had to choose a number between 0 (absence of the variable that we evaluated) and 10 (maximum intensity of that variable). In our study, we used these scales to measure pain, muscular rigidity upon awakening, sleep quality, and fatigue.

We also employed a drawing of a human figure on which patients marked the exact location of the pain, a medication record, a semistructured Evaluation Interview (to collect information on pain history, precursors and consequences of pain behavior, biographical data), and the clinical impressions of the therapists conducting the CB and CBH treatments.
Hypnotic Treatment and Fibromyalgia

Procedure

Participants were selected by a pain specialist at the Hospital Juan XXIII of Tarragona, Spain, according to these criteria: fulfilling diagnostic criteria for fibromyalgia (Wolfe, 1990), symptoms for at least a year, not having received psychological treatment previously for this disease, no psychiatric pathology, and not receiving economic compensation nor being in the midst of legal litigation concerning the disease. Once selected, a psychologist interviewed them and provided the consent form to be signed and the various questionnaires.

Measures were taken pre- and post-treatment, and at 1 and 3 months. The CB and CBH groups were also measured at baseline and during the treatment, but not group C for logistical reasons.

Post-treatment and follow-ups were administered by an experienced, masked independent rater. Baseline measures for the control group were administered by the medical specialist who recruited the participants.

The treatments for the cognitive-behavioral plus hypnosis group (CBH) and the cognitive behavioral (CB) group consisted of 10 weekly 1-hour meetings. Each session consisted of review of therapeutic homework, introduction and practice of therapeutic strategies, and assignment of new homework. The therapist for CBH was a woman and for CB was a man, both with wide experience in clinical psychology and treatment of pain. The therapeutic strategies were:

1. Information about the disease, consisting of an explanation of the causes, evolution, and treatment of fibromyalgia, including the factors that contribute to an increase in symptomatology, and information on the nature of pain and the factors that regulate it.
2. Coping skills, with instruction on cognitive-behavioral strategies to manage pain through cognitive restructuring about beliefs of lack of control over some elements of the disease, and of how cognitions can increase or decrease symptomatology.
3. For the CBH group, suggestions and training in waking hypnosis (Rapid Self-Hypnosis) to help with specific symptoms (see below). For the CB group, training in relaxation and visualization.
4. Training in social skills and problem resolution.
5. Planning of daily leisure activities, and physical exercise.
6. Relapse prevention, by consolidating learned skills and maintaining achievements reached through positive feedback, and anticipating future problems (e.g., relapses in pain, stressful situations) and how to solve them.

In the CBH condition, specific suggestions were given for various symptoms. For pain, there were two types of suggestions. The first uses the imagery of a panel of switches, each one with a different color, that control the connection to each part of the body. The participants were told that they could disconnect the sensations of discomfort going to the body part that requires well-being (LeCron, 1964). The second type of suggestion for pain asked participants to think of moving the sensation of discomfort or pain to a part of the body where it would be less bothersome so they could feel more comfortable and safe.

There was also one suggestion to increase self-esteem. After explaining that sickness and weakness can foster thoughts of incapacity and weakness, the patients were told that as they had been able to overcome a difficult situation (e.g., raising a family, working, overcoming the death of close ones), they could become more aware of their capacities to overcome the disease. The last suggestion focused on morning stiffness or insomnia. Participants were told to focus their attention on their breathing and note the passage of fresh air through the nose and throat to the lungs, filling the body with sensations of well-being and tranquility. The exhaled air would cast out feelings of rigidity and tension, and increasingly the body would have a nice sensation of relaxation, helping reduce any muscle rigidity.
The suggestions were given and taught in the context of an easy form of self-hypnosis that can be employed covertly during everyday activities called “rapid self-hypnosis” (Capafons, 2004, Martínez-Tendero et al., 2001). Responsiveness to hypnotic suggestions was evaluated by looking at nonverbal behaviors consistent with the suggestion (e.g., a facial expression of calmness after a relevant suggestion) and by asking participants if they had experienced what had been suggested (to which they responded affirmatively).

Patients in the control condition (group C) were just told that they could collaborate in research on fibromyalgia by filling out some questionnaires. They were provided information on fibromyalgia following the customary standard of care offered as part of the medical treatment in the hospital. All participants in the study received the same type of medication, consisting of a tricyclic or dual antidepressant, an SSRI and a non-steroid anti-inflammatory.

Analyses
Taking into account the exploratory character of the study and the small sample size ($N = 6$), we use descriptive sequence graphics to illustrate the variables measured during the pre-post-treatment and follow-up.

Results
Figures 1-3 show the results obtained in symptom measures. In the CBH group, patient 1 shows a noticeable decrease in all symptoms, especially pain, rigidity, and number of sensitive points, whereas patient 2 has a smaller but still noticeable decrease.

In the CB group, for patient 3 pain the number of sensitive points descend slightly at the end of treatment and during the follow-up, and rigidity completely disappears at 3 months. However, sleep quality and fatigue increase slightly after treatment. For patient 4, only the number of sensitive points, sleep quality, and fatigue decrease slightly at the end of treatment. At a 1 month follow-up there was considerable increase in symptoms.

In group C, patient 5 showed almost no changes at post treatment or at follow-up. Patient 6’s symptoms were very stable with a bit of variation for sensitive points.

Figures 4-6 show the evolution of the beliefs and perception of pain, and the impact of fibromyalgia for each patient. For CBH, beliefs on pain stability and ignorance about pain decrease markedly after treatment for patient 1 with a similar, but not as pronounced, pattern for patient 2. For both CB patients, ignorance about pain decreases. For group C, the only clear movement is for ignorance about pain to increase.

With regard to impact of the disease, CBH patients showed noticeable decreases. In contrast, patient 3 in the CB group showed few changes and patient 4 showed fluctuations at different times. For the group C, there was just a small tendency to deteriorate.

We also collected the clinical impression from the therapists. They observed that both treatment groups exhibited significant clinical improvement, as manifested by:

1. Increased physical, social, and leisure activities levels, and more willingness to make future plans for the accomplishment of leisure activities.
2. Notably reduced consumption of medication, according to the patient’s self-reports.
3. As with most people with fibromyalgia we have observed, at the beginning our sample exhibited a sad facial expression - no smiling, despondency, behavioral inhibition, and rigid posture and movements. During the treatment and the follow-ups, the patients exhibited non-verbal behaviors consistent with a better mood (smiling, less
Hypnotic Treatment and Fibromyalgia

rigid movements, more relaxed facial expression, fluency of speech, absence of pain grimaces while changing postures, etc.)

4. At the end of both treatments, all patients responded affirmatively to the two questions: Would you recommend this sort of treatment to other persons in your same situation? Do you believe that the time and the effort devoted to the treatment were worth the effort? It should also be mentioned that patient 4 may have worsened at the 1-month follow-up because of a stressful situation she encountered during the treatment, but unrelated to it.

Figure 1: Symptoms (Hypnosis Group)

Figure 2: Symptoms (Cognitive-Behavior Group)
Figure 3: Symptoms (Control Group)

Figure 4: Pain & Beliefs Perception Inventory and Fibromyalgia Impact Questionnaire (Hypnosis Group)
Hypnotic Treatment and Fibromyalgia

Discussion

We had predicted that the psychological interventions would improve purely pharmacological treatment, and that hypnosis would synergize the cognitive-behavioral treatment. Overall, CBH had the best results for all symptom variables. CB patient 3 also improved whereas results were mixed for patient 4. Participants in the group C did not improve noticeably throughout treatment. We also predicted that change in symptoms would correlate with changes in the impact of the disease, and the beliefs and perception about pain. Our
results suggest that symptom improvement does decrease the impact of the disease. With regard to perception and beliefs on pain, CBH and CB were associated with a reduction of the beliefs on the stability of the pain and ignorance about it, whereas for group C there seemed to be an increase of the beliefs of the stability of pain and ignorance about its mechanisms.

In summary, it seems that CB, with or without hypnosis, is noticeably better than a purely pharmacological strategy, and provides greater control over pain and other symptoms by offering information and providing strategies of control that reduce the belief that nothing can be done about pain. These results support other investigations on the greater efficacy of CB plus medication over only pharmacological treatments with promising new data on the use of hypnosis as an adjunct.

Our study does have methodological and clinical limitations, foremost the small N. We are aware that we could not control potentially relevant variables such as SES, cultural level, age, and family situation despite the heterogeneity of people with fibromyalgia with respect to psychosocial and adjustment characteristic (Okifuji & Turk, 1999); whether the efficiency of the treatments is mediated or moderated by these variables should be assessed. Also, group C was not evaluated perfectly, as there were no measures of symptoms at baseline or during treatment because of the logistics of these patients coming to the hospital only to be evaluated. It would also be advisable to extend assessment during the baseline period and to increase the follow-up to at least 12 months.

Both CB and CBH groups had greater contact time with a therapist, so a control group that included this variable would help isolate the specific therapeutic elements of the psychological treatment. Also, experimenter bias cannot be completely ruled out because the CBH therapist knew the experimental hypotheses and there could also be an effect for gender because the CBH therapist was a woman and the CB therapist was a man. Finally, although augmented by clinical observations, our measures are self-reports, with the consequent limitations of basing our conclusions only on that source. Despite these limitations, however, this pilot study suggests that hypnosis is a promising intervention for fibromyalgia and deserves replication with a more elaborate design.

References

Hypnotic Treatment and Fibromyalgia


Martínez-Valero, Castel, Capafons, Sala, Espejo, Cardena


Author’s Notes

1Centro de Aplicaciones Psicológicas, Valencia, Spain.
2Hospital Juan XXIII, Tarragona, Spain.
3University of Valencia, Spain.
4Lund University, Sweden

We are grateful to Arintxu, a chronic care nurse at the hospital Juan XXIII, for administering the measures, and Caroline Watt, Ph. D., for her editorial help.