
Complementary and Alternative Medicine Approaches to Pain Management



Gabriel Tan and Julie A. Alvarez

*Michael E. DeBakey Veterans Affairs Medical Center
and Baylor College of Medicine*



Mark P. Jensen

University of Washington School of Medicine

This article argues for and illustrates incorporating complementary and alternative medicine (CAM) interventions into pain treatment plans. Two CAM treatments, cranial electrotherapy stimulation (CES) and self-hypnosis training, are offered in a multidisciplinary pain treatment program. Because these interventions focus on pain relief, they may be of particular interest to patients who have chronic pain who begin treatment with a primary interest in pain reduction. Two cases that illustrate the clinical application of CES and self-hypnosis are presented. When effective, these interventions can help patients have greater confidence in treatments offered by psychologists for pain management and may help make them more open to participating in other psychological interventions that have established efficacy for pain management (e.g., cognitive-behavioral therapy). Because of their brevity, these treatments also can be offered alone to patients who may not have the resources or time to participate in more time-intensive treatment. © 2006 Wiley Periodicals, Inc. *J Clin Psychol*: In Session 62: 1419–1431, 2006.

Keywords: pain management; complementary and alternative medicine (CAM); hypnosis; cranial electrotherapy stimulation

In the practice of Western medicine, individuals suffering from chronic pain often seek medical care with the hope of obtaining a specific diagnosis and curative treatment. When a curative treatment is not available, patients who have chronic pain frequently expect a prescription for analgesic medications (“painkillers”) for pain relief.

Correspondence concerning this article should be addressed to: Gabriel Tan, Michael E. DeBakey Veterans Affairs Medical Center (Anesthesiology 145), 2002 Holcombe Boulevard, Houston, TX 77030; e-mail: TAN.GABRIEL@med.va.gov

Unfortunately, specific diagnoses for most chronic pain problems are difficult to make, and treatments are rarely curative. Moreover, although analgesic medications can be effective in relieving acute pain in the short term, their utility for treating chronic pain is controversial and efficacy is, at best, marginal. For example, in a recent review of the efficacy of various treatments for patients who have chronic pain, it was noted that the average pain reduction for patients placed on long-term opioids is only 32% (Turk, Loeser, & Monarch, 2002). In addition, anticonvulsants, tricyclic antidepressants, and topical preparations (considered the treatment of choice for neuropathic pain) seldom produce pain reductions to below a rating of 4 on 0 to 10 numerical scales. Turk (2002, p. 355) concluded that "none of the currently available treatments eliminates pain for the majority of patients." Thus, despite the availability of multiple biomedical treatments for chronic pain, there remains ample room for additional, and perhaps for some patients even more efficacious, treatments.

Psychological Interventions for Pain Management

Cognitive-behavioral therapy (CBT) and other psychological interventions provide a viable alternative to traditional Western biomedical pain treatments. A growing body of research supports their efficacy for helping patients better manage chronic pain (e.g., Keefe, Abernathy, & Campbell, 2005; Morley, Eccleston, & Williams, 1999). However, like more traditional biomedical-focused pain treatments, psychological interventions are not universally effective (McCracken & Turk, 2002).

Furthermore, psychological interventions are not without their limitations. First, in order to be successful, they require significant effort and motivation from the patient (Jensen, Nielson, & Kerns, 2003). These treatments also tend to be time-intensive (10 or more 1-hour individual or group sessions is not unusual), and they usually require significant practice of the cognitive and behavioral management skills outside the treatment sessions. In addition, some patients who have chronic pain are so wedded to the traditional medical model, in which treatments are done "to" them and not by them, that they may have little interest in treatments that require their own efforts. Many such patients who desire a biomedically focused treatment will not participate in or follow through with psychologically based therapies such as CBT.

Along these lines, there may be a subset of patients who are particularly skeptical, rational, analytic, and hyposensitive to the emotional somatic component of psychosocial threats (Wickramasekera, 1998). Such patients tend to be reluctant to examine the cause of negative emotional somatic information and instead tend to search for physical explanations of and physical solutions for their distress. When these patients are referred for psychological treatment (for a pain problem), they may not attend the sessions or follow through with homework assignments or practice recommendations that are often a part of these psychological approaches. One reason for this apparent resistance may be the belief that seeing a psychologist for pain problems amounts to an admission that their pain is "in the head" and not real.

Complementary and Alternative Medicine

Complementary and alternative medicine (CAM) has been defined as a "diagnosis, treatment and/or prevention which complements mainstream medicine by contributing to a common whole, satisfying a demand not met by orthodoxy, or diversifying the conceptual frameworks of medicine" (Ernst, 2000, p. 252). According to the National Center for Complementary and Alternative Medicine, CAM includes "treatments and healthcare

practices not taught widely in medical schools, not generally used in hospitals, and not usually reimbursed by medical insurance companies” (Arnold, 1999, p. 1104). CAM encompasses both nontraditional treatments used in association with conventional Western medical practices as well as alternative medical interventions intended to replace traditional Western medical practices (Chiappeli, Prolo, & Cajulis, 2005).

CAM interventions have been increasing in popularity over the past two decades because of dissatisfaction with traditional Western medicine, the availability of information on the Internet, the influence of marketing forces, and the desire of patients to be more actively involved in their own medical decision making (Engel & Straus, 2002). Eisenberg and colleagues (1998) estimated that the U.S. public spent between \$36 billion and \$47 billion on CAM treatments in 1997. A recent U.S. national health survey of 31,044 adults found that 36% of the population surveyed used CAM therapies during the previous 12 months (Barnes, Powell-Griner, McFann, & Nahin, 2004). This percentage increased to 62% if prayer for health reasons was included in the definition of CAM. Back pain, neck pain, and joint pain are among the problems for which CAM therapies most commonly are used (Barnes et al., 2004).

In addition to traditional psychological treatments, we frequently use two CAM modalities: cranial electrotherapy stimulation (CES) and self-hypnosis training. CES involves “the application of a small amount of current, usually less than one milliamperere, through the head via ear clip electrodes” (Kirsch & Smith, 2000, p. 85). The CES device we use, called “Alpha-Stim,” has been approved by the U.S. Food and Drug Administration (FDA) as a treatment for depression, anxiety, and insomnia (Lichtbroun, Raicer, & Smith, 2001). On the basis of the finding that patients who have chronic pain frequently have comorbid affective disorders, CES began to gain popularity as an adjunctive intervention for pain management in the 1990s.

The mechanism(s) by which Alpha-Stim produces effects is not fully known. However, on the basis of previous and ongoing studies, it appears that the Alpha-Stim microcurrent waveform activates particular groups of nerve cells that are located at the brainstem, a site at the base of the brain that sits atop the spinal cord. These groups of nerve cells produce the neurotransmitters serotonin and acetylcholine, which can affect the chemical activity of nerve cells that are both nearby and at more distant sites in the nervous system. In fact, these cells are situated to control the activity of nerve pathways that run up and down the spinal cord to the brain. By changing the electrical and chemical activity of certain nerve cells in the brainstem, Alpha-Stim appears to amplify activity in some neurological systems and diminish activity in others. This neurological “fine tuning,” called *modulation*, occurs either as a result of or together with the production of a certain type of electrical activity pattern in the brain known as an *alpha state*, which can be measured on brain wave recordings (called *electroencephalograms* [EEGs]). Such alpha rhythms are accompanied by feelings of calmness, relaxation, and increased mental focus. The neurological mechanisms that are occurring during the alpha state appear to decrease stress effects, reduce agitation and stabilize mood, and control both sensations and perceptions of particular types of pain. These effects can be produced after a single treatment, and repeated treatments have been shown to increase the relative strength and duration of these effects. In some cases, effects have been stable and permanent, suggesting that the electrical and chemical changes evoked by Alpha-Stim have led to a durable retuning back to normal function (Kirsch, 2006).

A small, but growing, body of controlled studies has reported on the efficacy of CES in reducing pain in patients who have fibromyalgia, tension headaches, spinal pain, dental pain, and unspecified chronic pain (e.g., Kirsch & Smith, 2000; Lichtbroun et al., 2001). For instance, in a double-blind, placebo-controlled study in which 60 randomly

assigned fibromyalgia patients either were given three 1-hour-daily CES treatments, three 1-hour-daily sham CES treatments, or were held as wait-listed controls, treated patients showed significant improvements in pain, sleep, well-being, and quality of life and no placebo effect was found among the sham-treated controls (Lichtbroun et al., 2001). In another double-blind study in which 50 patients (30 receiving real CES and 20 receiving sham CES) were randomly assigned to receive different dental procedures, 24 of the 30 patients (80%) who received CES were able to undergo dental procedures without other anesthesia, while 15 of the 20 (75%) sham CES patients requested anesthesia (Clark et al., 1987). Our own double-blind placebo control pilot study on central neuropathic pain (below the level of injury) associated with spinal cord injury indicated significant reduction in pain intensity post session that was greater for the active CES treatment than the sham CES treatment (Tan et al., 2006). Although the mechanism(s) of action of CES on pain is still unclear, it is generally believed that the effects are mediated through a direct action on brain activity in the limbic system, hypothalamus, and/or reticular activating system. It also has been suggested that CES reduces anxiety and depression, thereby indirectly elevating the pain threshold (Kirsch & Smith, 2000). In addition, CES (and self-hypnosis training) can serve a useful "Trojan horse" function to persuade patients to become involved in psychologically based interventions. A practical feature of CES is that a psychologist simultaneously can carry out psychotherapy while the patient is "hooked up" to the device. Once patients learn that they can modify pain with changes in brain activity by using CES, they may become more willing to consider other treatments that alter brain activity, such as CBT.

Providing self-hypnosis training alone, or in conjunction with CBT and other psychological therapy, is a common practice for many psychologists. In *Handbook of Hypnotic Suggestions and Metaphors* (Hammond, 1990), the following hypnotic strategies and techniques for managing pain are described in detail: unconscious exploration to enhance insight or resolve conflict, creating anesthesia or analgesia, cognitive-perceptual alteration of pain (and pain behavior), and decreasing awareness of pain (distraction technique). In addition to these hypnotic approaches to pain management, we use the mind-body healing approach of Rossi (1993). In this latter approach, hypnotic suggestions can be given during the session for the patient to regress and access past learning, memory, and experience. As an example, a patient who had intractable headaches not amenable to conventional treatment was asked to regress and access memory that would help her manage her pain. While in a hypnotic state, she recalled several incidents of her first-grade teacher's "knocking" her on the head with a pencil when she was not able to answer questions. The experience was very embarrassing, and she kept it to herself all her life. This moment of awareness and insight led the patient to report in a subsequent session that her headaches no longer were bothering her.

There is a growing body of research suggesting that hypnosis is an efficacious treatment for acute procedural pain and chronic pain conditions (Patterson & Jensen, 2003). A meta-analytic study examining the effect of hypnosis for pain reduction found that it offered considerable pain relief for 75% of the populations included in the analysis (Montgomery, DuHamel, & Redd, 2000). Hypnosis generally has a significantly greater impact on pain reduction as compared to no treatment, medication management, physical therapy, and education/advice (Jensen & Patterson, in press).

Evolution of the Houston VA Pain Management Program

The Michael E. DeBakey VA Medical Center (MEDVAMC) pain management program is an anesthesiology-based multidisciplinary program that serves a tertiary teaching hospital.

The psychologist and trainees in the program are involved primarily in outpatient care, providing a variety of individual and group psychological services. Initially, the psychological services consisted primarily of assessment and treatment services for patients (referred by pain anesthesiologists) who were experiencing psychological distress related to pain (e.g., depression, anxiety, and relationship conflicts) or suspected of drug seeking or abuse. In addition, these patients often were unresponsive to pain medications, nerve blocks, and other traditional biomedical interventions.

We soon noted a number of limitations to the services we offered, the most notable of which was a consistently high rate of nonattendance at the initial appointment and/or limited follow through after the initial appointment. This pattern led us to consider providing CAM interventions for pain, which we thought would be of interest to at least a subset of our patients. A second limitation of the services we initially offered was related to the nature and characteristics of our pain population. Many of our patients travel long distances (60 to 150 miles) to reach the MEDVAMC and have limited means to get to the center. To serve their needs, our interventions need to be brief and provide relatively quick results. A third factor that led us to consider CAM approaches was the severity of the pain conditions in our veteran population, which made pain relief a primary goal for many of our patients—a goal that is not entirely consistent with CBT, which tends to focus on improvement in function rather than pain relief per se. Veterans who receive care from a VA Medical Center also differ from the population at large in several significant ways. They are more likely to be older, have poorer health status, be smokers, be heavy drinkers, have psychiatric problems, be socioeconomically disadvantaged, be homeless, and have more severe pain intensity, pain interference, depression, and disability when compared to nonveterans (e.g., Tan, Jensen, Robinson-Whelen, Thornby, & Monga, 2001).

We have found that VA patients who have chronic pain referred to our services usually are not prepared for psychotherapy because they do not view their pain as affective or psychological in nature. Rather, as do many patients who have chronic pain, these patients consider their pain as primarily a physical problem, and they want a “real” physically focused treatment. Our experience also has been that patients referred to our service are not likely to continue with an intervention that does not provide symptom relief in a short period. Therefore, we have developed a case management approach in which we aim at “connecting” quickly with the patient and focusing at first on providing quick symptomatic relief. Here is a typical sequence of service provision:

1. All patients referred to the pain program complete and return by mail a clinical questionnaire, which is scored for risk factors and needs for psychosocial interventions.
2. Patients, thus identified, are scheduled to attend an education/orientation meeting followed by a brief 30-minute screening, before or while seeing a pain anesthesiologist. The meeting is structured to educate patients about chronic pain by questioning and (ideally) debunking a purely biomedical focus and introducing the notion that decreasing pain interference and mind and body reconditioning also might be important. By conceptualizing pain management as “brain” management, alternative interventions such as cranial electrotherapy stimulation (CES) and self-hypnosis training, as well as CBT, are introduced. The expected impact is that patients will begin to adopt a different perspective on the management of their pain.
3. CAM interventions, designed specifically to achieve initial pain relief (and indirectly to initiate the process of teaching patients self-management skills), are

explained and made available to those interested. On average, 90% of patients who attended this initial orientation/education class and screening have indicated a desire to pursue CAM interventions.

4. When the patients are seen in subsequent individual sessions, the focus is to utilize CAM interventions such as CES to provide a “physical” treatment that typically results in immediate relief in pain or other symptoms. A preliminary analysis of 97 individual sessions in which CES has been used since the beginning of this program indicates an average postsession pain reduction of 2.02 points on a 0 to 10 Likert scale or 33.3% average reduction. Psychological interventions are not the main focus of treatment at first but are woven into the sessions for those who are interested. Patients are encouraged to participate concurrently in our education, support, and skills training groups.

In the section that follows, we present two cases in which CES plus hypnosis or hypnosis alone was used successfully to help veterans who have chronic pain better manage their symptoms.

Case Illustration 1: JS

Presenting Problem/Client Description

Identifying Data. JS is a 60-year-old African American male who was referred to the Pain Clinic by his primary care physician (PCP). He had worsening pain in his lower back and hip secondary to an injury in Vietnam.

Pretreatment Pain Interference and Distress

When asked to rate how much pain interfered with his daily life by using the Brief Pain Inventory Pain (BPI) Interference scale, he rated the amount of interference as 9/10 for general activity, 9/10 for mood, 8/10 for walking ability, 8/10 for normal work, 8/10 for relations with people, 9/10 for sleep, and 9/10 for enjoyment of life. In addition, on a categorical scale of distress, he rated his current level of distress as “high.”

Previous Pain Treatment

Previous treatments for his pain conditions included (1) chiropractor (“caused a lot more pain”), (2) massage (“made me feel really good but cost money”), (3) physical therapy (“made me feel good but did not do anything with the pain”), and (4) medications (on various pain medications in the past; currently has good relief from tramadol (Ultram) and naproxen (Aleve, Naprosyn) as prescribed by his PCP).

Family and Social History. JS was born in a small town in Texas and reported having a normal, happy childhood. His father was White, his mother African American, and his parents reportedly were happily married. He is the second oldest child of 14 children.

Educational, Vocational, and Military History. JS obtained an associate degree in elementary education after completing high school. He was drafted into the Marines Corps at age 20, served 13 months including a tour of duty in Vietnam, and was released from active duty in the late 1960s. While in Vietnam, JS served in a gunnery unit. He was injured when a bunker, which was hit by an enemy mortar round, collapsed on him. He

also was shot accidentally in the leg by a fellow soldier who was cleaning a rifle. He subsequently suffered from combat-related posttraumatic stress disorder (PTSD). After discharge from active duty, JS worked for 8 years with the postal service until he was terminated for dereliction of duty. He filed a grievance with the union and was awarded compensation for harassment and unfair discharge. JS has not worked for the past 5 years because of pain in his knees and back. He receives medical disability.

Mental Health Treatment. JS has been enrolled in the Mental Health Trauma Recovery Program for veterans suffering from PTSD for the past 5 years. He first was seen by mental health professionals because of sleep problems and nightmares. He endorsed symptoms of intrusive thoughts from his Vietnam experiences, hypervigilance, heightened startle reflex, and isolation. He said he did not use alcohol or illicit drugs because of his religious beliefs.

Current Living Situation. JS has been married for 33 years to his second wife. They have three children: one died of acquired immunodeficiency syndrome (AIDS), one died at 2 months of age of unspecified cause, and the third child, a son, is 26 years old. His wife has five children from her previous marriage. They also care for four to five foster children. JS describes their relationship as “very good” and his wife as “very supportive.” He stays at home most of the time doing household chores and helping out the neighbors with chores. Although generally isolated from others, he maintains frequent contact with his brother and neighbor.

Case Formulation

JS’s back injury and PTSD developed while he was serving in combat in Vietnam. As with many Vietnam veterans who suppressed their emotional trauma without full resolution, he “went on with life as usual.” As he grew older and retired from employment, he had more unoccupied time to himself and some of the unresolved conflicts began to surface. The reexperiencing of his trauma in the form of nightmares probably has led to increased muscle tension and bracing postures, which, in turn, triggered, escalated, and exacerbated his previous chronic back pain condition. In Pavlovian terms, the pain that has been paired with the emotional trauma has returned with the reexperiencing of the trauma. If this formulation is correct, the treatment of the pain would need to go hand in hand with the resolution of his emotional trauma in order to be optimally effective. His record shows that he was quite active in his PTSD treatment and was able partially to resolve his emotional trauma, an outcome that was considered a positive sign and indicative of at least a fair prognosis for his pain treatment.

Course of Treatment

The initial treatment goals were to reduce pain, stabilize and improve sleep, and help him regain a sense of control over his daily activities. The treatment plan consisted of CES to reduce anxiety and improve sleep, self-monitoring skills, and hypnosis to help modulate his pain while making a long-distance trip and to begin the resolution of his trauma. After an initial screening, JS was seen for a total of nine individual sessions. A typical session commenced with his completing a Likert scale in which he was asked to rate his pain intensity from 0 to 10. The CES device and the way it works were briefly explained together with the common sensation of “tingling” or “pins and needles” on his ear lobes as the current was increased. He also was made aware that some individuals might feel

slightly light-headed initially as the body adjusted to the introduction of microcurrent to the brain, but that this sensation typically disappeared after a few minutes. He then would be connected to the CES device via two ear clip electrodes, followed by a fine tuning of the level of current intensity from 0 to 6. After the unit was turned on, he would be asked to report when he first noticed any sensation to the point of discomfort, at which point the current would be reduced until the discomfort disappeared. Then his progress and the previous session would be discussed. The content of the discussion varied, depending on his needs and desired treatment goals. Each session ended with a posttreatment pain rating and homework assignment if appropriate. See Table 1 for a synopsis of the sessions.

Outcome and Prognosis

In addition to the patient's self-reported improvement in his pain and related symptoms, comparison of pre- and post-psychometric testing using the BPI and the abbreviated form of the Center for Epidemiological Scale-Depression (CES-D) indicated a number of improvements, including significant reductions in pain intensity, pain interference, and depressive symptoms. The findings indicate that JS benefited from the interventions, which included CES and self-hypnosis training. In addition to decreased pain intensity, he reported meaningful reductions of pain interference in all aspects of his daily functioning. Although he was only mildly depressed before treatment, some improvement in depression also was noted. Perhaps equally significant were the substantial reduction in pain medication use and the ability to function with minimal assistance from health care providers.

Some readers may have noticed an apparent discrepancy between the high level of pain initially reported by the patient and the relatively lower pain level reported during the sessions. The patient explained this discrepancy with the scheduling of all the sessions in the mornings, when his pain was relatively milder. Nevertheless, it is clear that the patient reported substantial improvement in his experience of pain as shown in the table.

Case Illustration 2: EC

Presenting Problem/Client Description

Unlike the case of JS, in which hypnosis was "adjunct" to CES and psychotherapy, the following case illustrates the use of hypnosis as the primary CAM modality. Although EC terminated his therapy prematurely because of transportation difficulties, his case was selected because it represents a classic example of how hypnosis can be used to treat pain in a person who appears to have moderately high hypnotic ability.

Identifying Data. EC is a 63-year-old White male who sought treatment of chronic low back pain. He sustained an injury in 1980 while working on an oil rig and spent 8 days in traction. He previously was examined by the anesthesiologist-pain specialist and given the diagnoses of lumbar spondylosis and facet disease. EC also reported severe intractable headaches that significantly interfered with his ability to focus and concentrate.

Pretreatment Pain and Interference. Before treatment, EC reported in the BPI that his worst pain was 9/10, least pain was 6/10, average pain was 6/10, and "now" pain was 9/10. Pain interference was reported as 8/10 for general activity, 5/10 for mood, 5/10 for walking ability, 7/10 for normal work, 7/10 for relations with other people, 8/10 for sleep, and 8/10 for enjoyment of life. Satisfaction with life was rated as 6 to 7 out of 10.

Table 1
Synopsis of Sessions for the Case of JS

Session	Content/Focus	Progress	Changes in Prepain Postpain Rating	Homework
1	Initial screening	Not applicable	Not applicable	Not applicable
2	Sleep problems; stretching and exercises	Not applicable	3/10 to 0/10	Self monitoring of pain (when worsened or improved)
3	Same as session 2	Last week pain was mild; sleep improved a little	4/10 to 0/10	Same as session 2 plus stretching
4	Same as sessions 2 and 3	Sleep continues to improve; relaxing in a quiet room was helpful in reducing pain	2/10 to 0/10	None
5	Discussed Taijiquan (a form of martial arts for health-enhancement) and slow-motion stretching followed by instruction from the therapist	Pain less bothersome; took only one Tramadol three times last week as opposed to the prescribed four daily	2/10 to 0/10	Look for provider of Taijiquan in his community; practice slow-motion stretching exercises he learned today
6	Family issues and how that may contribute to stress and pain	Family tension increased pain somewhat, yet sleep improved significantly (which he attributed to cranial electrotherapy stimulation)	4/10 to 2/10	None
7	Planning to take a long-distance driving trip that has been quite stressful and painful in the past	“Very pleased” with treatment; “pain is mostly gone”; sleep has improved; no pain medication past week	2/10 to 0/10	None
8	Began hypnotic training to prepare him for the long driving trip; posthypnotic suggestion of “body flowing with the motion of the car and being able to relax”	Reported only 1 day of pain last week; sleep improvement has been maintained; took only one Tramadol last week	2/10 to 0/10	To practice self-hypnotic technique as instructed
9	Previous treatment for posttraumatic stress syndrome and how to use hypnotic technique to regulate anxiety	Despite long driving trip, pain did not interfere with enjoyment; he was able to use hypnotic analgesia as needed; sleep improvement has been maintained	2/10 to 0/10	To consider need for more sessions and possible termination
10	Progress review and need for more sessions	He has been able to get “very relaxed” using cranial electrotherapy stimulation and hypnosis; he has not been taking any pain medication; his sleep is now quite regular and satisfactory; his pain has been under control and “milder”	2/10 to 0/10	Not applicable

Pain and Other Treatment History. EC had been responding partially to acetaminophen/oxydnone (Percoset) as prescribed by his PCP. He found a chiropractor helpful for a while, and he had been treated with traction and nonsteroidal antiinflammatory drugs (NSAIDs). He denied having any history of mental health problems or treatment, but he did acknowledge some symptoms of depression (fatigue, depressed mood, irritability). He consumed two to four beers and one pack of cigarettes per day before treatment, but he denied using any illicit drugs. He reported a history of heavy alcohol use and previously was smoking two to three packs of cigarettes per day. He previously had tried to quit smoking by using the nicotine patch and bupropion (Zyban), which did not help. However, he reported that he subsequently was able to cut down on his smoking with the help of hypnosis (provided by other clinicians before he was seen for pain).

Family, Marital, and Social History. EC had been separated for 7 years from his wife after many years of marriage. He was residing at his daughter's house because his house had been destroyed in a fire and was being rebuilt with help from his son. He reported that he was not active in the community; however, he maintained contact with his family and a few friends.

Employment history. EC worked as a welder and pipe fitter for most of his life. He was unemployed and receiving social security disability because of asbestosis when he started treatment. He stated that he could not find a job because of his back pain and age.

Case Formulation

It was clear that EC was a "no-nonsense" type of person whose primary expectation of treatment was to achieve pain reduction so that he could "move on" with his life. Although he acknowledged some depression, he denied having any mental health problem or treatment in the past. The fact that he was able to obtain some help from hypnosis to reduce his cigarette smoking was a clue that he might be able to follow through and benefit from this intervention. Treatment goals were pain reduction in order to be able to enjoy activities, such as offshore fishing and golf, and improved physical condition. Treatment focused on training in self-hypnosis, but a stretching exercise program also was initiated as a means of increasing his ability to engage in daily activities.

Course of Treatment

After the initial screening, EC was seen for a total of five sessions with hypnosis as the primary intervention. The far eye fixation induction procedure was used, followed by several deepening procedures. After the induction, the suggestion was given that EC would be able to use his mind to decrease his pain intensity and that, as he gained mastery of hypnosis, his pain would interfere less with his life activities. He was given the further suggestion that he would be able to transfer his pain from one location to another if he so desired. He reported pre- to post-session pain reduction from 7/10 to 4/10 at the first session, suggesting a moderate degree of responsivity to hypnotic analgesia suggestions.

At the beginning of the second session, EC reported that he was able to transfer his pain from his head to his hand and to make his pain go away at times, which allowed him to focus on accomplishing more tasks involved in the rebuilding of his house. He also reported that his pain had been less "bothersome" and that he had been practicing the "relaxation" he had done in the last therapy session. During this session, hypnotic induc-

tion and deepening procedures were repeated with the posthypnotic suggestion of being able to increase his behavioral activities without being bothered by pain. He reported a pre- to post-session pain reduction from 6/10 to 0/10. In addition to hypnotherapy, he was shown several slow-motion reconditioning stretches from Chinese Qigong, and the need for reconditioning was emphasized.

During the third session, EC continued to report his ability to transfer pain from his head to his hand. He stated that his back pain had decreased and that he had been feeling more comfortable in general. In addition, he reported being able to mow his lawn for the first time in over a year. Finally, he reported reducing the use of his pain medication from four to two pills a day. He said that he practiced the slow-motion stretching taught in the previous session. The hypnotic training was repeated as before along with the suggestion that he would be able to substitute the sensation of “drifting and floating” for “rocking and jerking.” Pre- and post-session pain ratings were not completed during the third session because of an oversight.

EC was seen again for hypnosis with further focus on transforming the sensation of “rocking and jerking” to “floating and drifting” to prepare him for a future deep sea fishing trip. He reported a pain reduction from 8/10 to 5/10 during the fourth session. At the beginning of the fifth and final hypnotherapy session, EC reported continued progress. He also reported being “stressed” by having to baby-sit several children of his friends and relatives who unexpectedly dropped them off at his daughter’s house where he was residing. Despite the higher level of stress, he reported pre- to post-session pain reduction from 8/10 to 0/10.

Outcome and Prognosis

At the end of the fifth and final session, EC stated that he would have to take a break from the treatment because of lack of transportation. He lived far away, and, because of a limited budget, he could not afford to continue paying someone to give him a ride to the sessions. He noted that he was much more comfortable now than he was before treatment, and he expressed confidence in his ability to apply his hypnotic skills on his own.

Clinical Issues and Summary

The cases presented illustrate the potential for CES, self-hypnosis training, and their combination in helping individuals with chronic pain experience less pain, gain control over pain symptoms, and minimize the effects of pain on their lives. The focus of both CES and the self-hypnosis training provided to these patients was on pain relief. In the second case, the hypnosis also included suggestions for increased activity and ability to function despite pain, hypnotic suggestions that may be underutilized in the treatment of chronic pain conditions (Patterson & Jensen, 2003). Many, but not all, patients are able to achieve meaningful reductions in the severity of pain with these interventions. For some of these patients, the pain relief can last weeks, months, and even years (Patterson & Jensen, 2003).

Many patients who have chronic pain begin treatment with a bias toward wanting treatments that are biomedically focused and that directly impact their experience of pain. For these patients who subsequently respond well to CES and/or self-hypnosis training, CAM interventions can be an effective means of engaging them and helping them achieve some reduction in their experience of pain. When effective for reducing pain and also improving other symptoms, such as global distress and sleep interference (Jensen et al., in press), these interventions also can be used as a way of helping patients learn that a peripheral “cause” of their pain need not necessarily be diagnosed and “fixed” in order for them to achieve relief.

Improvements that occur in some patients after CES and hypnosis may be sufficient for many of them. However, for patients who seek additional pain relief or reduced interference with functioning, the benefits obtained from CAM treatments such as CES or self-hypnosis training can be used as evidence for the potential efficacy of other psychological treatments that alter the way the brain processes pain information, such as CBT. As more is learned about the specific effects of these and other CAM treatments for pain, they can be incorporated into and used in conjunction with other more traditional pain treatments, as a way to maximize the overall efficacy of pain treatment. In this way, we can seek to ensure that the greatest number of patients obtain the greatest benefit from the care that we offer.

Select References/Recommended Readings

- Arnold, K. (1999). Alternative medicines gain in popularity, merit closer scrutiny. *Journal of the National Cancer Institute*, 91, 1104–1105.
- Barnes, P. M., Powell-Griner, E., McFann, K., & Nahin, R. L. (2004). Complementary and alternative medicine use among adults: United States, 2002. *Advance Data*, 343, 1–19.
- Clark, M. S., Silverstone, L. M., Lindenmuth, J., Hicks, M. J., Averbach, R. E., & Kleier, D. J. (1987). An evaluation of the clinical analgesia/anesthesia efficacy on acute pain using the high frequency neural modulator in various dental settings. *Oral Surgery, Oral Medicine, Oral Pathology*, 63, 501–505.
- Eisenberg, D. M., Davis, R. B., Ettner, S. L., Appel, S., Wilkey, S., Van Rompay, M., et al. (1998). Trends in alternative medicine use in the United States, 1990–1997: Results of a follow-up national survey. *Journal of the American Medical Association*, 280, 1569–1575.
- Engel, L. W., & Straus, S. E. (2002). Development of therapeutics: Opportunities within complementary and alternative medicine. *Nature Reviews: Drug Discovery*, 1, 229–237.
- Ernst, E. (2000). Prevalence of use of complementary/alternative medicine: A systematic review. *Bulletin of the World Health Organization*, 78, 252–257.
- Hammond, D. C. (1990). *Handbook of hypnotic suggestions and metaphors*. New York: Norton.
- Jensen, M. P., McArthur, K. D., Barber, J., Hanley, M. A., Engel, J. M., Romano, J. M., et al. (in press). Satisfaction with, and the beneficial side effects of, hypnosis analgesia. *International Journal of Clinical and Experimental Hypnosis*.
- Jensen, M. P., Nielson, W. R., & Kerns, R. D. (2003). Toward the development of a motivational model of pain self-management. *Journal of Pain*, 4, 477–492.
- Jensen, M., & Patterson, D. R. (in press). Hypnotic treatment of chronic pain. *Journal of Behavioral Medicine*.
- Keefe, F. J., Abernathy, A. P., & Campbell, L. C. (2005). Psychological approaches to understanding and treating disease-related pain. *Annual Review of Psychology*, 56, 601–630.
- Kirsch, D. L. (2006). Cranial electrotherapy stimulation for the treatment of anxiety, depression, insomnia and other conditions: Illustrating how CES works. *Natural Medicine*, 23, 118–120.
- Kirsch, D. L., & Smith, R. B. (2000). The use of cranial electrotherapy stimulation in the management of chronic pain: A review. *NeuroRehabilitation*, 14, 85–94.
- Lichtbroun, A. S., Raicer, M. C., & Smith, R. B. (2001). The treatment of fibromyalgia with cranial electrotherapy stimulation. *Journal of Clinical Rheumatology*, 7, 72–78.
- McCracken, L. M., & Turk, D. C. (2002). Behavioral and cognitive-behavioral treatment for chronic pain: Outcome, predictors of outcome, and treatment process. *Spine*, 27, 2564–2573.
- Montgomery, G. H., DuHamel, K. N., & Redd, W. H. (2000). A meta-analysis of hypnotically induced analgesia: How effective is hypnosis? *International Journal of Clinical and Experimental Hypnosis*, 48, 138–153.
- Morley, S., Eccleston, C., & Williams, A. (1999). Systematic review and meta-analysis of randomized controlled trials of cognitive behavior therapy and behavior therapy for chronic pain in adults, excluding headache. *Pain*, 80, 1–13.

- Patterson, D. R., & Jensen, M. P. (2003). Hypnosis and clinical pain. *Psychological Bulletin*, 129, 495–521.
- Rossi, E. L. (1993). *The psychobiology of mind-body healing: New concepts of therapeutic hypnosis*. New York: Norton.
- Tan, G., Jensen, M. P., Robinson-Whelen, S., Thornby, J. I., & Monga, T. N. (2001). Coping with chronic pain: A comparison of two measures. *Pain*, 90, 127–133.
- Tan, G., Rintala, D. H., Thornby, J. I., Yang, J., Wade, W., & Vasilev, V. (in press). Using cranial electrotherapy stimulation to treat pain associated with spinal cord injury. *Journal of Rehabilitation Research and Development*.
- Turk, D. C. (2002). Clinical effectiveness and cost-effectiveness of treatments for patients with chronic pain. *Clinical Journal of Pain*, 18, 355–365.
- Turk, D. C., Loeser, J. D., & Monarch, E. S. (2002). Chronic pain: Purposes and costs of interdisciplinary rehabilitation programs. *TENS: Trends in Evidence-Based Neuropsychiatry*, 4, 64–69.
- Wickramasekera, I. (1998). Secrets kept from the mind but not the body or behavior: The unsolved problems of identifying and treating somatization and psychophysiological disease. *Advances in Mind-Body Medicine*, 14, 81–132.
- Winkleby, M. A., & Fleshin, D. (1993). Physical, addictive, and psychiatric disorders among homeless veterans and nonveterans. *Public Health Reports*, 108, 30–36.