Biofeedback for Chronic Pain

The term chronic pain covers a vast area, from very specific sites of pain to more global pain experienced by the patient all over their body. More than one-third of the population experiences chronic pain in their lives at some noticeable level (Bonica, 1992). Biofeedback has been found to help at both levels of chronic pain, sometimes with techniques that are understood to influence the whole physiology, and some methods are more focused on the parameters of the particular disorder.

Flor and Birbaumer (1993) reported that in treating back pain and temporomandibular joint pain with both biofeedback and relaxation therapy, biofeedback had the greatest positive effect on several aspects of pain that lasted at a 24 month follow-up. Stinson (2003) reviewed 18 randomized, controlled studies in a meta-analysis (from Eccleston, Morley, Williams, et al., 2002), and patients in the treatment groups had greater than 50 percent reduction in pain compared to the controls.

In a study by Qi and Ng (2007), two treatment groups were created for patellofemoral pain patients — one with exercise only and one with exercise plus biofeedback. After the eight week home program, the biofeedback group had significantly reduced pain.

In another study (Voerman, Vollenbroek-Hutten, & Hermens, 2006) involving pain patients wearing an ambulatory monitor for four weeks, measures of muscle activation and relaxation were recorded, and feedback was provided when relaxation was less than it should be. Pain in the neck, shoulders and upper back, as well as activation patterns in typing, rest, and stress tasks were measured. The intensity of the pain reduced after the training.

Lebovits (2007) summarized a comprehensive review by the National Institutes of Health Technology of several behavioral approaches, and the overall conclusion was that specific relaxation methods (including relaxation training, biofeedback, hypnosis, meditation and guided imagery) had the highest ratings for effectiveness.

As noted before, it is hard to tease out the exact contribution of biofeedback in many of these studies due to combined treatment modalities in many of the experimental conditions.

There are significant limitations in much of the medical treatment of chronic pain according to Singh (2005), who states: “The therapeutic response of pharmacology in chronic pain at the present time remains unsatisfactory at best and refractory at the worst. Multidisciplinary pain management has not only brought new hope, but has also increased the therapeutic response in general.” The references cited in this chapter, and in this section in particular, should give an indication that behavioral methods should be included in the medical treatment of chronic pa

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