

Data Support Online Therapies for Chronic Pain

Cognitive-behavioral therapy in a Web-based format improves patients' quality of life.

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BETHESDA, MD. – Evidence-based nonpharmacologic therapies may be at least as effective as medications in treating chronic pain, and the Internet could prove to be a valuable method for delivering these interventions.

Although pharmacologic agents alone are of only modest benefit and rarely lead to clinically meaningful functional improvement among patients with chronic pain, there is strong evidence for nonpharmacologic therapies such as cognitive-behavioral therapy (CBT) in improving functional status and mood, as well as pain itself, David A. Williams, Ph.D., said at the meeting, sponsored by the University of Michigan and the National Institutes of Health.

A meta-analysis of 25 papers found that active psychological treatments based on the principle of CBT produced significantly greater improvements in pain experience, cognitive coping, appraisal, and behavioral expressions of pain, compared with other active treatments, in patients with a variety of chronic pain problems, excluding headache (Pain 1999;80:1-13).

Another meta-analysis, this one including 22 studies of adults with non-cancerous chronic low back pain, found that psychological interventions – particularly CBT and self-regulatory treatments – significantly reduced pain intensity, pain-related interference, and depression while significantly improving health-related quality of life. Multidisciplinary approaches that included psychological interventions also had positive effects (Health Psychology 2007;26:1-9).

And two more meta-analyses – one of 49 studies, the other of 23 – have demonstrated an equal or greater effect for nonpharmacologic therapies compared with pharmacologic treatment for fibromyalgia (Ann. Behav. Med. 1999;21:180-91; Pain 2010;151:280-95).

"There is a 30-year history of non-pharmacologic interventions that have rival effect sizes to some pharmacologic approaches and even surpass some. The problem is, [nonpharmacologic interventions are] rarely used in clinical practice," explained Dr. Williams, professor of anesthesiology, medicine (rheumatology), psychiatry, and psychology and associate director of the chronic pain and fatigue research center at the University of Michigan, Ann Arbor.

The use of nonpharmacologic treatment has been limited for a variety of reasons.

Medical schools don't spend much time teaching it, insurance companies often don't adequately cover it, patients of-

ten can't access it, it lacks the million dollar marketing campaigns that pharmaceutical companies devote to their drugs, and it carries a stigma, he noted.

Delivering such evidence-based interventions via the Internet potentially sidesteps several of the barriers that prevent their wider use, including those of access, cost, convenience, and privacy.

Numerous pilot or small-scale studies have supported the efficacy and utility of this approach, with outcomes that are often consistent with or even greater than those identified when using traditional face-to-face modalities, Dr. Williams said.

The following are studies of Web-based interventions with evidence to support their efficacy. Some of the sites are now online, while others were developed in the context of academic research and are currently not available to the public:

E-Mail Discussion Groups

These early e-health efforts demonstrated significant benefit in a randomized controlled trial of 580 individuals with chronic low back pain, from 49 states. The intervention included a moderated e-mail discussion group combined with a workbook and videotape about back pain. Controls received a subscription to a nonhealth magazine of their choice. At 1 year, the e-mail group had significant improvements in pain, disability, role function, distress, and health care utilization (Arch. Intern. Med. 2002;162:792-6).

Swedish Study

In this controlled trial, 56 patients with chronic low back pain were randomized to 8 weeks of either Internet-based CBT with telephone support or to a waiting list. Treatment included CBT modules involving relaxation, exercise and stretching, cognitive restructuring, activity pacing, and relapse prevention. Weekly telephone contact with a therapist related to the goals of the program and homework.

At 3 months, those who had treatment showed statistically significant improvements, compared with those on a waiting list, in control over pain, ability to decrease pain, and catastrophizing (Pain 2004;111:368-77).

WEBMAP

This one delivered CBT to the young. In a randomized controlled trial, 48 children aged 11-17 years who had chronic headache, abdominal, or musculoskeletal pain and associated functional disability were assigned with their parents to either an Internet treatment group or to a waiting list.

The Internet treatment group completed 8 weeks of online modules including relaxation training, cognitive

strategies, parent operant techniques, communication strategies, and sleep and activity interventions, in separate sites for patients and parents.

Controls had only current medical care (Pain 2009;146:205-13).

There was a significantly greater reduction in activity limitations and pain intensity at post treatment for the Internet treatment group, which were maintained at a 3-month follow-up. Clinically significant lessening of pain was also greater for the Internet treatment group than for the waiting-list control group.

Teens Taking Charge

Another CBT-based site for young people, "Teens Taking Charge: Managing Arthritis Online" focuses specifically on those with juvenile idiopathic arthritis and their parents.

In a 12-week nonblinded, randomized controlled trial done at four centers in Canada, 46 adolescents aged 12-18 with JIA plus one parent each were randomized to the Internet intervention or control arm (J. Rheumatol. 2010;37:1944-52).

The CBT-based self-management modules, written specifically for teens,

Both the public and private sectors are showing interest in developing Internet-based treatment for chronic pain. But a broader consensus is needed from providers.

provide education about arthritis and symptom management, and also address areas such as relaxation, medications, distraction, and managing thoughts. A journal page allows the teen to track progress. Two modules for parents focus on arthritis impact and "letting go." Multimedia components include more than 300 pages of content, including Flash animation, video, forums for teens and parents, surveys, and weekly quizzes. The online "coach" has a BA degree in psychology.

At posttreatment, the intervention group had significantly better knowledge and lower average weekly pain intensity.

painAction

This interactive self-management Web site for people with chronic back pain was evaluated in a pretest-posttest controlled trial in which 209 patients were randomized to either the site (www.pain-action.com) for 4 weeks plus monthly boosters or text-based material (Pain Med. 2010;11:1044-58).

The site was based on CBT and self-management principles, including collaborative decision making, goal setting, problem solving, relapse prevention, nutrition, stress management, and exercise. As with many of the other sites, this one included interactive tools, personalized assessments, and a library of articles.

At 6 months, clinically significant

changes were seen in pain, depression, anxiety, and global ratings of improvement among those randomized to the site, which is supported by Endo Pharmaceuticals Inc. and King Pharmaceuticals Inc.

Living Well With Fibromyalgia

From Dr. Williams' group at the University of Michigan, this Internet-based exercise and behavioral self-management program for fibromyalgia was designed for use in the context of clinical care. A total of 118 patients were randomized to the program plus standard care, or standard care alone (Pain 2010;151:694-702).

Among the site's features are CBT modules including educational material about fibromyalgia and its treatment; symptom management with modalities including medications, exercise, sleep, and relaxation; and lifestyle changes including goal setting, problem solving, and graded activation.

Multimedia tools include video lectures by professionals, downloadable worksheets, self-monitoring forms, and audio recordings of exercises (www.fibroguide.com).

At 6 months, overall improvement was seen in 57% with the Web program vs. 21% with standard care alone.

The proportion experiencing 30% pain improvement or greater (pain responders) was 29% vs. 8% with standard care alone, and functional improvement, defined as an

improvement of 0.5 standard deviations, was seen in 31% vs. 6%. All differences were statistically significant, and the number needed to treat for both outcomes was 5, better than the typical 7-19 seen in pharmaceutical trials, Dr. Williams noted.

In a recent meta-analysis of 11 studies of Web-based interventions for chronic pain that used pain scale scores as the main outcome, the standardized mean difference between intervention and waiting-list group means was 0.285, favoring the Web interventions but with a small effect size (J. Pain 2010;11:917-29).

"Broader adoption of this method of delivering care for pain needs to be moved to the next level in terms of both infrastructure and practitioner consensus," Dr. Williams said in an interview.

"Hopes of expanding Internet-based behavioral treatment for pain would need to contain content reflecting a broader consensus of experts from the various disciplines associated with pain management," he said.

"Currently there is great interest in developing such resources both in the public and private sectors.

"This appears to be a valuable approach to supplying individuals with an aspect of effective pain management that is often missing."

Dr. Williams is a consultant for Eli Lilly & Co., Forest Pharmaceuticals, and Bristol-Myers Squibb. ■