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Case Study: Acupressure for chronic low back pain: a single system study

"Effects of SP6 Acupressure on Labor Pain and Length of Delivery Time in Women During Labor"

Abstract:

Purpose:

Low back pain (LBP) is the leading cause of global disability. Acupressure is a manual approach that can be used for self-management of LBP. The purpose of the study was to determine the effectiveness of acupressure in treating chronic LBP.

Subjects and Methods:

The research design was a single system study utilizing an AB design... During phase A, the subject received traditional physical therapy interventions. During phase B, the subject received acupressure in addition to traditional physical therapy interventions. Outcomes included the Visual Analog Scale (VAS), the Patient Specific Functional Scale (PSFS), and the Oswestry Disability Index (ODI).

Results:

For the VAS, the pain was 38.8 mm at baseline, decreased to 11.3 mm after phase A, and decreased to 2.5 mm after phase B. For the PSFS, the subject's function was 5/10 at baseline, remained the same after phase A, and increased to 9/10 after phase B. For the ODI, the subject's disability was moderate (30%) at the baseline, decreased to minimal (14%) after phase A, and completely resolved (0%) after phase B.

Conclusion:

The data indicated that integrating acupressure in physical therapy could reduce pain, increase function, and decrease disability.

Introduction:

Low back pain (LBP) is the leading cause of global disability1). With the estimated 21.7 million disability-adjusted life years in 2010, LBP arising from ergonomic exposures at work is considered a major cause of disability.

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Pharmacologic therapy plays an important role in LBP treatment2). Non-pharmacologic therapies with good evidence of moderate efficacy for chronic or subacute LBP include cognitive-behavioral therapy, exercise, spinal manipulation, and interdisciplinary rehabilitation3) ... In the US, it is estimated that total costs attributable to LBP could be between $84.1 and $624.8 billion each year6)...

Acupressure is a manual approach that can be used for self-management of LBP. Acupressure, one of the Traditional Chinese Medicine (TCM) approaches, is a non-invasive manual approach that involves manipulation of the skin and soft tissues with primarily the fingertips instead of needles on acupoints, but it is less well studied than acupuncture8). In addition to fingertips, various body parts (knuckles, forearms, and heels) and blunt devices may also be used9)... Acupressure is an ancient healing art, parallel to acupuncture, that is easy to learn and suitable for self-management of pain. It does not require expensive equipment and large space to provide treatment to the patient.

Acupressure treatment has been introduced by physical therapists and other professions to treat LBP based on the beliefs of removing obstructions that block energy flow and relieving pain by improving circulation and nutrition12, 13). Randomized controlled trials have demonstrated that one month of acupressure treatment can significantly decrease pain, improve function, and decrease disability for at least 6 months14,15,16,17). Systematic reviews based on randomized controlled trials concluded that acupressure has been shown to be effective for relieving a variety of symptoms18, 19). However, acupressure for treating low back pain has not been well studied and is not widely available in the US. Therefore, it is not included in the joint clinical practice guideline from the American

College of Physicians and the American Pain Society4). The purpose of this research project was to determine the effectiveness of integrating acupressure in treating chronic LBP.

Subjects and Methods:

...The subject (n=1) was a 54-year-old male with a 20 year history of low back pain. He was an autoworker whose occupation required him to handle materials weighing up to 40 pounds. His past medical and surgical histories were unremarkable except for a prior left sided hernia surgery and a history of arthritis. His low back pain was recently exacerbated after attempting to lift his dog from the floor. Upon initial assessment, he complained of pain in the lumbar region that radiated into the right hip. He reported having increased pain while sitting and leaning forward to lift objects. Lying down eased his pain. He took Advil as needed for pain management. The subject demonstrated decreased lumbar extensor and abdominal muscle strength of 3+/5. Active left thoracic rotation and lumbar flexion, extension, and left lateral flexion were limited. The subject's right thoracic paraspinal muscles and bilateral piriformis muscles were tight and tender upon palpation. He reported increased pain with passive right straight leg raise and right hip external rotation. The subject reported his pain intensity as 38.8 mm on the VAS. His initial PSFS score was 5/10 for the activity of leaning forward, and his initial modified ODI score was 30%. The subject's pain, decreased strength, decreased range of motion, and decreased functional performance were consistent with chronic low back pain and possible disc herniation.

The subject was treated for a total of three 90 minute sessions within 2 weeks. Traditional physical therapy was administered during the first session. Acupressure and physical therapy were administered during the

last two sessions. Traditional physical therapy interventions included stretching, strengthening, modalities (ultrasound), treadmill walking, and motorized mechanical traction. Acupressure was applied to acupoints (LI 4, GB 30, GB 31, and GB 34). Each point was held for approximately one minute or until the patient related that tenderness had subsided, with multiple repetitions...

Results:

For the VAS, the subject reported his pain was 38.8 mm at baseline, decreased to 11.3 mm after phase A, and decreased to 2.5 mm after phase B. For the PSFS, the subject's function (leaning forward) was 5/10 at baseline, remained the same after phase A, and increased to 9/10 after phase B. For the ODI, the subjec's disability was moderate (30%) at the baseline, decreased to minimal (14%) after phase A, and completely resolved (0%) after phase B.

Discussion:

This research report provides information for the management of chronic LBP. The data indicated that integrating acupressure in physical therapy could reduce pain, increase function, and decrease disability. It supported integrating acupressure into physical therapy treatment for chronic LBP...In the past, acupressure and TCM did not receive significant recognition in the western world...Acupressure is rooted in TCM but has grown considerably in the West, despite the fact that it is difficult to be explained in terms of anatomical and physiologic concepts familiar in Western medicine13). In addition to decreasing LBP, systematical reviews have found the effectiveness of acupressure in decreasing symptoms such as nausea and vomiting in patients during pregnancy and during chemotherapy, pain in patients with dysmenorrhea, during labor and after trauma, dyspnea, and improving fatigue and reducing insomnia in various populations18, 19). Further, the systematical review has found the effectiveness of acupressure in treating patients with

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neurological29,30,31,32), cardiac33), and pulmonary34, 35) disorders…There are similarities between acupressure and some of the manual techniques that have been used by physical therapists for a long time. Trigger points have significant overlap with acupoints36). Ischemic compression manipulates the skin in a similar fashion to acupressure37,38,39). When performing the suboccipital release technique, too40), the contact points of the therapist are actually acupoints…The healthcare spending in the United States has been increasing every year and is now over 17.5% of its GDP41, 42). As mentioned earlier, acupressure does not require expensive equipment and large space. Using acupressure, therapists can teach patients a technique to control their own pain, as it is relatively easy to learn key points. In addition, a significant association has been found between complementary and alternative medicine (CAM) use and self-rated excellent health and health improvement43). As a manual technique derived from CAM, acupressure has the potential to save the healthcare costs while improving patient satisfaction and outcomes by promoting self-management of pain.

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