



An Integrated Mind–Body Approach to Arthritis: A Pilot Study

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ABSTRACT

Arthritis affects both the physical and psychological abilities of people in all walks of life. There are currently no recommended effective ‘disease-modifying’ remedies. Therapists and physicians are therefore exploring possible benefits from non-conventional therapeutic approaches. The purpose is to assess the changes in fitness and psychosocial outcomes of six doctor-referred patients as a result of participating in the I Can Move Again (ICMA) program. Six female participants diagnosed with arthritis were recruited from a local family practitioner. The subjects participated in a series of daily classes for 12 weeks including massage, mindfulness, bounce-back chairs, resistance chairs, aerobic and anaerobic training, rebounders, and whole body vibration platform Tai Chi. Demographic, psychosocial, and physical data were collected at the ICMA and at Y-Be-Fit (Provo, UT). Significant pre to post mean differences were found for sit-ups ($F(1,8) = 5.42$ $P = 0.048$), chair stand ($F(1,10) = 6.622$ $P = 0.028$), arm curl ($F(1,10) = 14.379$ $P = 0.004$), six-minute walk test distance ($F(1,9) = 19.188$ $P = 0.002$), and speed ($F(1,8) = 13.984$ $P = 0.006$), and rotation right ($F(1,10) = 8.921$ $P = 0.014$) and left ($F(1,10) = 11.373$ $P = 0.007$), in 27 of the 61-item questionnaire. The preliminary data on the six subjects lacked sufficient statistical power to detect the significant differences that could exist, thus committing a Type II error, but it is important to note an overall, substantial trend in improvement in the patients’ physical outcomes and psychosocial perceptions associated with improvements in activities of daily living.

Key words: Arthritis, Complementary alternative medicine, Exercise, Meditation, Tai Chi

INTRODUCTION

Arthritis is a disease that affects both the physical (e.g. walking, standing, and other activities of daily living or ADLs) and psychological (i.e. well-being, self-image, and productivity) abilities of people in all walks of life. Persons suffering from arthritis experience symptoms ranging from mild inconvenience and discomfort to complete debilitation due to joint immobility and pain caused by joint inflammation and cartilage degeneration (as in osteoarthritis). The etiology of joint inflammation may be due to factors such as, autoimmune disease or traumatic injury. Regardless of the cause, arthritis can impose severe re-

strictions on one’s quality of life. It is estimated that 50 million^[1] Americans are living with some form of arthritis, and of those, 27 million^[2] are suffering from osteoarthritis (OA). The cost to the US^[3] is estimated to be nearly \$128 billion — some \$81 billion in medical care expenditure and an additional \$47 billion in lost earnings. Despite these massive medical-related costs (virtually everyone intended to mitigate the symptoms rather than cure arthritis) there are currently no recommended effective ‘disease-modifying’ remedies.^[4] Therapists and physicians are therefore exploring the possible benefits of non-conventional therapeutic approaches, both pharmacological and non-pharmacological.

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The American College of Rheumatology report, the 2012 Recommendations for the Use of Non-pharmacologic and Pharmacologic Therapies in Osteoarthritis of the Hand, Hip and Knee,^[5] suggests the following non-pharmacological interventions: Emphasis on muscular strength and aerobic exercise (for example, Tai Chi [TC], land- or aquatic-based activities) in combination with manual or modality therapies, weight management, self-management skills, and psychosocial interventions. The report's pharmacological recommendations include over-the-counter (OTC) nonsteroidal anti-inflammatory drugs (NSAIDs) in the topical or oral variety, acetaminophen, or corticosteroid injections.^[5]

Complementary alternative medicine

The current conventions for treating OA include physical therapy, pharmacological interventions, and complementary alternative medicine (CAM) (non-mainstream approaches [e.g. acupuncture, dietary supplements, massage, meditation, Tai Chi,^[6] etc.] used in conjunction with conventional medical treatment [e.g. physical therapy, NSAIDs, and corticosteroid injections]). In developed countries, it is estimated that approximately 30-70% of the people with OA use CAM.^[7] More pertinent to this study, the following forms of CAM will be discussed in depth.

Massage

Massage has been used as a pain modality for years. In a study conducted by Perlman,^[8] massage was found to be a beneficial treatment for OA. A meta-analysis conducted in 2011, found several studies on the benefits of massage for management of pain associated with knee OA.^[9]

Topical aids

Topical aids (e.g. celadrin, capsaicin, menthol, NSAIDs, etc.) have been used for the treatment of arthritis. Some of the ingredients most salient to this study are first, celadrin, a COX 2 inhibitor, used to improve range of motion (ROM) and function during activity in the arthritic joints.^[10,11] Next, methylsulfonylmethane (MSM), organic sulfur, was shown to be effective in OA model mice,^[12] by decreasing the degeneration of the cartilage at the knee's joint surfaces. MSM used in humans, Debbi, *et al.*,^[13] demonstrated a decrease in pain (via the Visual Analog Scale; [VAS]) and an increase in physical function (via the Western Ontario and McMaster University Osteoarthritis Index; [WOMAC]) compared to a placebo. Capsaicin is a neuromodulator and has been recommended as 'an add-on therapy for patients with persistent local pain and inadequate response or intolerance to other treatments'.^[14] Lastly, Arnica is commonly recommended for external use for rheumatic muscle and joint problems, inflammation, and for symptomatic relief in OA of the hands^[15] and knees.^[16,17]

Vitamins and minerals

Diets deficient in trace minerals, such as zinc, magnesium, selenium, and copper, may lead to joint disease and arthritis.^[18] Ross,^[17] argues that proper nutrition should always be the focus when combating inflammation in the body. Eating foods that contain anti-inflammation properties can give you a proper balance of macronutrients (e.g. omega-3 fatty acids), which in turn are effective in fighting inflammation.^[17] Ross advocates that,

'nutritional supplementation in addition to eating high-quality food helps build a strong foundation for optimal health,'^[17] including a high-potency multiple vitamin/mineral formula and an antioxidant complex of nutrients (including Vitamin C and E), and Omega-3 fatty acids (fish oil with EPA/DHA).^[17]

Tai Chi

Wang^[4] suggests that Tai Chi has both physical and mental components that combine to decrease pain and increase strength, cardiovascular health, and balance. Yan,^[19] states that, "Tai Chi is a low-impact physical activity with slow and gentle movements associated with health benefits, including increased flexibility and lower extremity muscle strength, improved fitness and cardiovascular health, better gait, balance, functional performance, and decreased arthritic symptoms, for a variety of conditions, including OA." Tai Chi is especially helpful for OA patients, because it is easy and gentle on the body. The fluid and graceful motions of Tai Chi require muscular strength, joint mobility, and overall body balance from participants, without worsening the OA symptoms.^[20] Hence, this may be an ideally suited OA intervention.

Meditation

Davidson^[21] found that meditation (i.e. altering one's level of consciousness to achieve a specific benefit, such as pain reduction or psychological well-being) produced positive effects in the body's immune functions. The effects of mindfulness (a western, non-sectarian, research-based form of meditation, as a means of increasing awareness of both the sick toward or the healthy to maintain optimal health and well-being) have been shown to mitigate the pain and barriers to psychological well-being for persons who suffer from various rheumatic conditions, including OA.^[22]

Exercise

Exercise is often recommended as the first intervention against OA. There are several forms of exercise that are possible. For example, Golightly^[23] found that, "strong evidence supports that aerobic and muscle strengthening exercise programs are beneficial for improving pain and physical function in adults with mild-to-moderate knee and hip OA." On account of the correlation between cardiovascular disease and arthritis (perhaps due to weight reduction), it may also be beneficial to focus on low impact interval training to work the cardiovascular system as well.^[24]

Adopting an integrated approach

With no clear evidence that arthritis can be cured, physicians are recommending one or more therapies or medicines hoping to find some relief for their patients. This trial-and-error approach can be lengthy and expensive. It may be prudent to take an integrated approach, by combining many of the recommended treatments with CAM treatments into one comprehensive treatment protocol.

The I Can Move Again (ICMA) Wellness Center has created a 12-week program that combines both medical-practitioner recommended and CAM treatments, to help provide therapeutic and psychosocial benefits to individuals with arthritis. The program includes massage, heat modalities, mindfulness and visualization, stretching, daily supplements, and topical aids (ingredients in the nutritional supplements and topical aids are listed in the appendix).

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