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Research Paper

Association of complementary and alternative medicine use with symptoms and physical functional performance among adults with arthritis

Patricia A. Sharpe, Ph.D., M.P.H.[a,b,*], Sara Wilcox, Ph.D.[a,b], Danielle E. Schoffman, B.A.[a,c], Brent Hutto, M.S.P.H.[a], and Andrew Ortaglia, Ph.D.[d]

[a]*Prevention Research Center, Arnold School of Public Health, University of South Carolina, USA*
[b]*Department of Exercise Science, Arnold School of Public Health, University of South Carolina, USA*
[c]*Department of Health Promotion, Education and Behavior, Arnold School of Public Health, University of South Carolina, USA*
[d]*Department of Epidemiology and Biostatistics, Arnold School of Public Health, University of South Carolina, USA*

Abstract

Background: Research shows high prevalence of complementary and alternative medicine (CAM) use in individuals with arthritis. Little is known about CAM use and objectively measured physical functional performance.

Objective: The main objective was to determine if CAM use was associated with self-reported symptoms and physical functional performance in adults with arthritis. The secondary objectives were to describe the perceived helpfulness and correlates of CAM use.

Methods: We analyzed cross-sectional data from a self-administered questionnaire and objectively measured physical functional performance prior to randomization to a self-paced exercise program or control condition ($n = 401$). We used the Fisher's exact test, analysis of variance, and general linear models to examine the association of CAM use with socio-demographic characteristics, symptoms and functional performance. Logistic regression computed the odds of perceiving CAM as helpful by level of use.

Results: Most respondents had used CAM (76%). Dietary supplements were the most-used (53.1%). Female gender and college education predicted greater number of modalities used. Compared to non-users, use of any CAM was associated with greater fatigue and lower grip strength; relaxation techniques with lower walk distance and gait speed; dietary change with greater pain and stiffness and lower walk distance; and yoga with lower pain and stiffness, greater walk distance, chair stands, seated reach and gait, but lower grip strength. Perceived help was positively associated with the number of modalities used.

Conclusions: Associations between CAM and symptoms or functional performance were mixed. Only yoga showed positive associations; however, yoga practitioners were more physically active overall than non-practitioners.

Keywords: Complementary therapies; Arthritis; Physical functional performance

Complementary and alternative medicine (CAM) encompasses diverse health care approaches developed outside of conventional Western medicine.[1] CAM modalities are derived from diverse and complex unconventional and non-western models of health and disease. A wide range of theories and proposed mechanisms of action for CAM therapies have been proposed, including those that fit within the conventional medical model, such as placebo effects, reduced inflammation, disruption of pain perception, and improved musculoskeletal function and those that do not fit within the western medical model, such as culturally-based systems of medicine, mind–body interactions, and bioenergetic models of the body.[1–5] CAM efficacy research has faced methodological challenges,[2] which has resulted in few definitive conclusions about the efficacy of CAM overall and for arthritis in particular.

CAM use is more prevalent among persons with arthritis than without.[6] National Health Interview Survey (NHIS) data revealed that among respondents with arthritis, 28%

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* Corresponding author. University of South Carolina, College of Social Work, Hamilton Building, Columbia, SC 29208, USA. Tel.: +1 803 777 4791.

E-mail address: sharpep@mailbox.sc.edu (P.A. Sharpe).

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had used CAM for arthritis in the previous year.[6] In clinic samples, CAM use is high, with 63–91% of arthritis patients[7–9] and 83–90% of primary care patients with arthritis[7,10] reporting ever using CAM for arthritis.

CAM users' perceptions of efficacy for arthritis vary widely in clinic-based studies.[9–11] Meta-analyses and systematic reviews of CAM modalities for treating arthritis reveal a mixture of null findings, positive findings and inconclusive findings for multiple dependent variables, mainly pain, stiffness, fatigue, sleep, and depression and less often, measures of functional status.[3–5,12] Associations between CAM use and self-reported pain, joint stiffness, disability or functional status have been found in population-based and clinic samples with arthritis,[6,9,13] but cross-sectional data cannot support causality in either direction.

Given the high prevalence of CAM use among population-based and clinic-based samples of people with arthritis but the relatively few CAM studies with physical functional measures as dependent variables, this study provided a valuable opportunity to further describe these potential associations. The main objective of this study was to determine if any CAM use, as well as use of specific CAM modalities, was associated with self-reported severity of pain, stiffness, and fatigue or with observed physical functional performance in a community-based sample of adults with arthritis. The secondary objectives were to describe the perceived helpfulness of CAM for arthritis and the socio-demographic and health-related correlates of CAM use in this community-based sample. We hypothesized that respondents who had used CAM in the previous three months would report lower levels of pain, stiffness and fatigue in the past two weeks and demonstrate better physical functional performance than those who had not.

Methods

Design and procedures

This study is a secondary analysis of baseline data collected from March 27, 2010 to October 15, 2011 among a community-based sample of 401 adults who were enrolled in a randomized controlled trial (RCT) of a self-directed exercise program.[14] The University of South Carolina's Institutional Review Board approved the study. We recruited residents of a southeastern metropolitan area via email listservs, newspapers, fliers and word-of-mouth. A telephone screening interview assessed eligibility. Sample size was determined through *a priori* power calculation, which indicated a need for 300 respondents to detect intervention effects ranging from .23 to .38 (Cohen's d)[15] across outcomes for the parent study with 80% power. An additional 101 were enrolled to offset attrition.

Respondents were included if they answered "yes" to the question: "Have you ever been told by a doctor or other health care professional that you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?" This question is from the Centers' for Disease Control and Prevention validated case definition of arthritis for public health interventions, which has been used in the Behavioral Risk Factor Surveillance Survey (BRFSS) and the National Health Interview Survey (NHIS) since 1992.[16]

Inclusion criteria were age ⩾18 years; not relocating; reads and writes English; and not participating in other research. One person per household could enroll. Exclusions were a serious fall in the past year; pregnant, breastfeeding, planning to become pregnant; diabetic taking insulin; could not walk >3 min without rest, stand unassisted >2 min, or sit in an armless chair >5 min; physically active (aerobic activities ⩾3 days/week for ⩾30 min/day or strength training ⩾2 days/week for ⩾20 min/day); unable to safely participate in physical activity[17]; or uncontrolled hypertensive (⩾160/100).

Respondents completed a mailed questionnaire and brought it to the measurement session. Along with the questionnaire, the participants received an informed consent form, a cover letter, and a map with directions in the mailed packet. The cover letter instructed participants to review the consent form and complete the questionnaire prior to the session. The letter described the expectations and procedures for the session, including the opportunity to ask questions about the study prior to signing the consent form. Staff persons answered questions, and once informed consent was obtained, reviewed the questionnaire for completeness and obtained and administered the measures. Physical therapy doctoral students conducted the physical functional performance assessments. Respondents received $20 for their time.

Measures

CAM questions

The wording of the CAM questions was adapted from the National Physical Activity and Weight Loss questionnaire.[18] CAM modalities (i.e., types) were selected for inclusion based on prevalence data from the 2002 NHIS regarding CAM use among persons with arthritis, the most current population-based, published data available at the time of this study.[2] We included modalities that at least 1% of NHIS respondents had used in the previous year, combining some categories and omitting "healing rituals."

Participants responded to the following questions: "During the past three months, have you used any of the following methods to help your arthritis? (yes, no option for each) a) Yoga; b) Acupuncture; c) Massage; d) Supplements (vitamins, minerals, herbs, Chinese medicines); e) Chiropractic; f) Relaxation techniques (meditation, visualization, breathing exercises); g) Homeopathy; h) Changes to your diet (avoiding or adding certain foods);

If you said 'yes' to any of the methods listed above, do you think that any of them helped your arthritis? (Yes, a lot; Yes, a little; Not sure; No, did not help). If you said 'yes' which one do you think helped the most? (check only one): Yoga,