



Movement and manual therapy for adults with arthritis: 2012 National Health Interview Survey

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ABSTRACT

Background: The use of manual therapies (chiropractic manipulation, massage) and movement therapies (yoga, tai chi) by people with arthritis may relate to their personal characteristics, and the reported emotional and physical health outcomes may differ by type of therapy.

Objectives: To describe personal characteristics and predictors of manual and movement therapy use for people with arthritis, and to compare the use of manual versus movement therapy to improve physical and emotional health outcomes for people with arthritis.

Methodology: CAM respondents with arthritis were identified from the 2012 National Health Interview Survey (n = 8229). Data were analyzed to determine the overall percentages of CAM users, and to examine the associations between use/nonuse using multivariable linear regressions.

Results: White, well-educated, physically active females were more likely to use both types of therapy. Movement therapy users reported positive emotional health outcomes twice as much as manual therapy users and 10% more reported positive physical health outcomes.

Conclusion: While both movement and manual therapies can have positive effects on people with arthritis, it appears that active therapies are more beneficial than passive therapies.

Disability is a common consequence of arthritis that can manifest in emotional and physical symptoms related to pain.¹ Some specific complications of pain in arthritic diseases include depressive symptoms,² sleep difficulty,³ and fatigue.⁴ Arthritis symptoms have traditionally been managed through pharmacological intervention.⁵ Yet, despite the ability of many pharmacological methods to reduce some of the underlying pathology of many types of arthritis, people with arthritis continue to experience significant disabilities related to their arthritis.^{6–8} People with arthritis have sought alternative methods to cope with secondary symptoms, frequently using non-pharmacological strategies.⁹ One common form of non-pharmacological intervention for symptom management is the use of Complementary and Alternative Medicines (CAM). CAM have become increasingly popular in the U. S.: A recent survey of CAM use among community dwelling older adults, found that 59.6% used CAM for a specific medical condition, most commonly arthritis (44.4%),¹⁰ and use of CAM therapies has increased significantly from 2002 to 2007.¹¹

chiropractic manipulation, massage, yoga, and tai chi represent four therapies used by people with arthritis¹² that are accessible, culturally acceptable, and relatively affordable. In previous studies, chiropractic manipulation and massage have been labeled “manual” therapies¹³ and

yoga and tai chi “movement” therapies.¹⁴ People with function impairments, greater fatigue, and higher pain scores tend to use movement therapies,¹⁵ and results suggest movement therapies are associated with improvements in physical function, vitality, general health and mental health.^{16,17} Twenty-five percent of individuals with arthritis who used CAM have listed massage as most helpful, 13.2% chiropractic manipulation, and 10.9% yoga practice.¹⁸

Since 25% of the population are projected to have some form of arthritis by 2030¹⁹, exploration of how people with arthritis use complementary and alternative medicines to manage physical and emotional symptoms is increasingly relevant. Currently, 90.5% of individuals with arthritis who have consulted a specialist, and 82.8% followed through primary care have tried at least one CAM.²⁰ Reasons for CAM use among people with rheumatoid arthritis are greater disease symptoms and less success with pharmacological intervention.⁶ Other reported reasons for CAM use are aversion to side effects of conventional medicines, loss of social roles, and depression.²¹

A biopsychosocial approach to pain and depression among individuals with arthritis assumes that biological, psychological, and social factors all influence the experience of pain and depression. Feeling helpless is a predictor of pain, and the level of pain is mediated by

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perceived control over disease, resulting in a relationship between passive coping and depression in this population.²² Complementary and alternative medicines can be viewed as passive or active therapies dependent on the level of involvement by the user. Chiropractic manipulation and massage are manual therapies that require the user to assume a more passive role while a practitioner initiates the therapy. Both these manual techniques are methods for pain relief that passively assist in joint mobility and circulation.¹³ Yoga and tai chi, as movement-based therapies, require the user to independently initiate controlled movement. Yoga and tai chi incorporate both physical and mental components resulting in a mind-body based therapy that has seen positive outcomes in mood regulation.¹⁴ Based on the biopsychosocial approach to pain and depression in this population,²² CAM activities that highlight individual active participation may lead to the perception of greater individual control over disease symptoms and decrease feelings of helplessness. Therefore, people with arthritis using movement therapies may be more likely to report both positive emotional and physical health outcomes due to the active role assumed during practice.

Although many CAM exist, some may be more suited for specific individuals than others. By comparing demographic, medical, and socioeconomic characteristics among CAM users, CAM can be targeted toward individuals who may benefit most from CAM use to manage emotional or physical symptoms of arthritis. This assumption is consistent with a previous study using NHIS CAM data from 2007 which found that individuals with multiple chronic conditions were more likely than healthy controls to try passive CAM for symptom management/health promotion.²³ Demographic, socioeconomic, and medical characteristics differ between adults with and without arthritis, as well as those who do and do not use CAM therapies. We used these variables to characterize our CAM users as well as our users of manual and movement therapies with arthritis. In addition to clinical care, targeted referral of CAM may be beneficial for symptom management.²⁴ Studies have already examined these characteristic for yoga and tai chi exclusively,^{25,26} but no study has examined these reports across categories of manually based (chiropractic manipulation, massage) and movement based (yoga, tai chi) therapies.

We had multiple purposes for this secondary data analysis: 1) to compare the percentages of people who use chiropractic manipulation, massage, yoga, and tai chi between those with arthritis and those without arthritis; 2) To compare demographic, socioeconomic, and medical characteristics of people with arthritis who use manual therapies versus movement therapies; 3) To identify predictors of manual and movement CAM use; 4) To compare the impact of manual and movement CAM on physical and emotional outcomes for people with arthritis. We also hypothesized that improvements in emotional health in addition to physical health would be reported more among users of movement therapies (yoga, tai chi) compared to manual therapies (chiropractic manipulation, massage) based on the biopsychosocial model discussed and the active role the participant plays in movement therapies.

1. Materials and methods

Study sample: The National Health Interview Survey (NHIS) 2012 adult data (age > 18) served as the study sample (n = 34,525). These data are representative of the non-institutionalized civilian population of the United States, and is collected through home interviews by trained NHIS surveyors. Data from the Sample Adult set were used, including select variables from the Person, Functional Disability, and Adult Alternative Medicine files. The Adult Alternative Medicine file is from the NHIS survey Supplement on CAM implemented every 5 years since 2002. Final response rate for the Sample Adult file was 79.7% (n = 27,516).

Answering “yes” to the question “Have you EVER been told by a doctor or other health professional that you have some form of arthritis,

rheumatoid arthritis, gout, lupus, or fibromyalgia?” identified respondents with arthritis (n = 8229). Tai chi use was determined if respondents answered “yes” to the question “DURING THE PAST 12 MONTHS, did you practice tai chi for yourself?”. Yoga use was determined if respondents answered “yes” to the question “DURING THE PAST 12 MONTHS, did you practice yoga for yourself?”. Chiropractic manipulation use was determined if respondents answered “yes” to the question “DURING THE PAST 12 MONTHS, did you see a practitioner for chiropractic or osteopathic manipulation?”. Massage use was determined if respondents answered “yes” to the question “DURING THE PAST 12 MONTHS, did you see a practitioner for massage?”. We then combined these four categories into two categories of movement therapies (yoga and tai chi) and manual therapies (chiropractic manipulation and massage) where an answer of “yes” for either yoga or tai chi indicated using movement therapies and an answer of “yes” for either chiropractic manipulation or massage indicated use of manual therapies (Fig. 1). These categories were not mutually exclusive, and an individual could use both manual and movement therapies.

During the survey, respondents were asked to identify the top three most important CAM they used ranked in order of importance and then to identify if the use of each individually was perceived to “improve overall health and feeling better” or “feeling better emotionally”. We used these rankings and questions to determine emotional and physical outcomes. Respondents were placed in the movement category if yoga/tai chi were among the top three most important categories, and respondents answered “yes” to the question of emotional health and/or physical health improvement directly related to the movement therapies. Respondents were placed in the manual therapy category if “chiropractic or osteopathic manipulation” or “massage” were among the top three most important categories, and respondents answered “yes” to the question of emotional health and/or physical health outcome directly related to the manual therapies (Fig. 2). These categories were not mutually exclusive.

We examined demographic characteristics as well as characteristics related to health, socioeconomic status, and lifestyle. Demographic characteristics included sex (male/female), education (high school or less, college or more), race/ethnicity broken into categories of Hispanic, non-Hispanic white, non-Hispanic black and non-Hispanic other, and age broken into 3 categories (18–44, 45–64, ≥ 65 years)

Health characteristics were based on self-reported data and individuals were dichotomized as having or not having obesity, comorbidities, or physical limitations. A Body Mass Index (BMI) (weight in kg/height in m²) was described as not obese if ≤ 29.9, and obese if ≥ 30.0. Responses for this variable were on a continuous scale but were dichotomized by the researcher. For comorbidities, a count tallied the number of “yes” responses from the following nine chronic conditions to establish the total number of comorbidities (0, ≥ 1): hypertension, heart conditions (coronary heart disease, angina, myocardial infarction, and other heart disease), stroke, emphysema or chronic bronchitis, current asthma, cancer (excluding non-melanoma skin cancer), diabetes mellitus (non-gestational), hepatitis, and/or weak/failing kidneys. Functional limitation was a dichotomous category of “limitation” or “no limitation” based on the respondent’s reported difficulty level with a series of mobility and daily activities (walking/climbing stairs, dressing or bathing). If the respondent indicated any difficulties, they were considered to have a functional limitation.

Socioeconomic characteristics included: income (< \$20,000, 20,000–\$34,999, \$35,000–\$64,999, > \$65,000), and highest level of education completed consisting of condensed categories of High School or less and College or more. Lifestyle characteristics: Physical activity level was captured from six questions addressing frequency, duration and intensity of non-occupational physical activity based on 2008 physical activity guidelines.²⁷ Dichotomous categories generated were “active” and “not active”. Respondents were classified as “smoker” or “non-smoker” based on their response to the question “Have you smoked at least 100 cigarettes in your entire life.”

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