

Osteoarthritis and Cartilage



Mindfulness is associated with psychological health and moderates pain in knee osteoarthritis



A.C. Lee †*, W.F. Harvey †, L.L. Price ‡§, L.P.K. Morgan ||¶, N.L. Morgan †#, C. Wang †

† Center for Complementary and Integrative Medicine, Division of Rheumatology, Tufts Medical Center, Boston, MA, USA

‡ Institute for Clinical Research and Health Policy Studies, Tufts Medical Center, Boston, MA, USA

§ Tufts Clinical and Translational Science Institute, Tufts University, Boston, MA, USA

|| Department of Psychology, University of Massachusetts Boston, Boston, MA, USA

¶ I Ola Lahui Rural Hawai'i Behavioral Health, Honolulu, HI, USA

Department of Medicine, John A. Burns School of Medicine, University of Hawaii, Honolulu, HI, USA

ARTICLE INFO

Article history:

Received 5 December 2015

Accepted 17 June 2016

Keywords:

Osteoarthritis

Mindfulness

Chronic pain

Psychological stress

SUMMARY

Objective: Previous studies suggest that higher mindfulness is associated with less pain and depression. However, the role of mindfulness has never been studied in knee osteoarthritis (OA). We evaluate the relationships between mindfulness and pain, psychological symptoms, and quality of life in knee OA.

Method: We performed a secondary analysis of baseline data from our randomized comparative trial in participants with knee OA. Mindfulness was assessed using the Five Facet Mindfulness Questionnaire (FFMQ). We measured pain, physical function, quality of life, depression, stress, and self-efficacy with commonly-used patient-reported measures. Simple and multivariable regression models were utilized to assess associations between mindfulness and health outcomes. We further tested whether mindfulness moderated the pain-psychological outcome associations.

Results: Eighty patients were enrolled (60.3 ± 10.3 years; 76.3% female, body mass index: 33.0 ± 7.1 kg/m²). Total mindfulness score was associated with mental (beta = 1.31, 95% CI: 0.68, 1.95) and physical (beta = 0.69, 95% CI: 0.06, 1.31) component quality of life, self-efficacy (beta = 0.22, 95% CI: 0.07, 0.37), depression (beta = -1.15, 95% CI: -1.77, -0.54), and stress (beta = -1.07, 95% CI: -1.53, -0.60). Of the five facets, the Describing, Acting-with-Awareness, and Non-judging mindfulness facets had the most associations with psychological health. No significant association was found between mindfulness and pain or function ($P = 0.08$ – 0.24). However, we found that mindfulness moderated the effect of pain on stress ($P = 0.02$).

Conclusion: Mindfulness is associated with depression, stress, self-efficacy, and quality of life among knee OA patients. Mindfulness also moderates the influence of pain on stress, which suggests that mindfulness may alter the way one copes with pain. Future studies examining the benefits of mind-body therapy, designed to increase mindfulness, for patients with OA are warranted.

© 2016 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.

Introduction

Mindfulness is the ability or practice of maintaining a non-judgmental state of heightened awareness of one's thoughts, emotions, or experiences on a moment-to-moment basis^{1,2}. The last

15 years have seen a surging interest in mindfulness as a therapeutic modality that may foster improved health outcomes for patients with chronic pain^{3–10}. Previous studies have found that higher levels of mindfulness in chronic pain patients were associated with lower self-reported pain^{7,9,11–13} and better pain coping perceptions^{3,14–20}. In addition, a recent meta-analysis revealed that interventions promoting mindfulness significantly reduced pain intensity and pain disability in chronic pain patients³. Mindfulness has recently been characterized as a multidimensional construct of five distinct facets: Observing, Describing, Acting with awareness, Non-judging, and Non-reacting. By analyzing mindfulness at the singular facet level, researchers attempt to further examine

* Address correspondence and reprint requests to: A.C. Lee, Center for Complementary and Integrative Medicine, Division of Rheumatology, Tufts Medical Center, 800 Washington Street, Box 406, Boston, MA 02111, USA. Tel: 1-617-636-8685.

E-mail addresses: Alee10@Tuftsmedicalcenter.org (A.C. Lee), WHarvey@Tuftsmedicalcenter.org (W.F. Harvey), Lprice1@Tuftsmedicalcenter.org (L.L. Price), lucas.morgan@gmail.com (L.P.K. Morgan), nani.loui@gmail.com (N.L. Morgan), CWang2@Tuftsmedicalcenter.org (C. Wang).

psychological mechanisms through which mindfulness specifically contributes to improved health^{2,14,21}. In chronic pain patients, however, only a few studies have utilized this multidimensional approach to assess mindfulness.^{22–24}

Whether mindfulness plays a role specifically in non-surgical patients with symptomatic knee osteoarthritis (OA) has never been examined. Knee OA is the most common cause of disability and joint pain in adults^{24,25}, and is primarily characterized by chronic pain which is exacerbated by central sensitization^{26,27}, and reduced physical functioning. In addition, patients with OA often suffer from comorbid depression²⁸ and anxiety, and significantly worse quality of life^{29,30}. Although interventions that promote mindfulness skills have repeatedly resulted in improved psychological outcomes for other chronic pain patient groups^{7,12,13,31}, the underlying mechanism of change remains unclear, and no studies have yet assessed the way mindfulness relates with parameters of physical and psychological health in patients with knee OA. In order to examine the disease-modifying mechanisms of mind body medicine treatments in this population, it is important to understand how mindfulness associates with various, relevant health outcomes. This type of knowledge is also important for optimizing the clinical decision-making process for knee OA patients.

The goal of this study is to examine how mindfulness and its facets are associated with pain, physical, and psychological health measured with commonly-used outcome tools in a chronic pain population with symptomatic knee OA. We further investigate for evidence of pain coping effects using interaction analyses of mindfulness on pain-psychological health associations. We hypothesize that higher total mindfulness and one or more individual facets of mindfulness will be associated with less pain, less depression, less stress, better self-efficacy and quality of life. We also hypothesize that mindfulness can moderate the influence of pain on psychological health.

Method

Study design

This study was a cross-sectional, secondary analysis performed on baseline data that was collected for a single-center, 52-week, randomized comparative effectiveness trial of Tai Chi vs standard physical therapy for adult patients with knee OA. Detailed description of the recruitment and enrollment criteria for this trial has been previously published.³²

Participants were recruited from the Greater Boston metropolitan area through advertisements using print media, social media, and the rheumatology clinic patient database at Tufts Medical Center. Inclusion criteria included: 1) age ≥ 40 years, 2) fulfillment of the American College of Rheumatology criteria for knee OA, and 3) Western Ontario and McMaster Osteoarthritis Index (WOMAC) pain score ≥ 40 . Exclusion criteria included: 1) prior experience with complementary medicine or physical therapy programs for knee OA within the past year, 2) severe medical limitations precluding full participation, 3) intra-articular steroid injections or surgery in the past 3 months, 4) intra-articular hyaluronic acid injections in the past 6 months, 5) Mini-Mental Status examination score < 24 , or 6) inability to walk without an assistive device. All participants signed an informed consent form before enrollment, and the study was approved by the Tufts Medical Center Institutional Review Board.

Outcome measures

The collection of FFMQ data was formally implemented in the study protocol after subject recruitment and data collection had

already begun. Therefore this study only reports data from the portion of enrolled participants who completed the FFMQ at baseline.

The *Five Facet Mindfulness Questionnaire* (FFMQ) is a self-report survey measuring total mindfulness and five different facets of mindfulness. The FFMQ was derived from exploratory factor analysis of the combined item pool of five independently-developed mindfulness assessment tools. It consists of 39 five-point Likert scale (1 = never or very rarely true to 5 = very often or always true) questions, where higher scores reflect higher mindfulness. Total mindfulness scores range from 39 to 195, and total facet scores from 7 to 40. The FFMQ has been validated in both meditating and non-meditating samples, and was the highest rated mindfulness patient-report assessment tool for construct validity and internal consistency.²¹

Five individual facets of mindfulness

1) The *Observing facet* (8-item, range 8–40) measures the ability to attend to or notice internal and external stimuli, such as sensations, emotions, cognitions, sights, sounds, and smells^{2,33}. 2) The *Describing facet* (8-item, range 8–40) measures noting or mentally labeling observed stimuli with words^{33,34}. 3) The *Acting-with-Awareness facet* (8-item, range 8–40) measures attending to one's current actions, as opposed to behaving automatically or absent-mindedly. 4) The *Non-judging of experience facet* (8-item, range 8–40) measures refraining from evaluation of one's sensations, cognitions, and emotions as negative, unacceptable, or intolerable^{2,33,34}. 5) The *Non-reactivity to experience facet* (7-item, range 7–35) measures the ability to allow thoughts and feelings to come and go, without getting caught up in or carried away by them.

The WOMAC is a self-report questionnaire consisting of three subscales used to assess pain, stiffness, and physical function in patients with hip or knee OA³⁵. The pain subscale consists of five items asking about pain during rest or activity, and can score from 0 to 500. The physical function subscale consists of 17 items asking about ability to perform daily activities, and can score from 0 to 1700.

The *Six-minute Walk Test* (6MW) is a measure of functional exercise capacity³⁶. Participants are asked to walk as far as possible within a 6-min period, and the distance covered at the end is noted and recorded.

Quality of life was assessed using the *Short Form-36* (SF-36), a generic measure of health status with well-documented psychometric properties³⁷. The SF-36 consists of 36 questions related to eight dimensions of quality of life. The questions are transformed into a point scale ranging from 0 to 100, with higher scores indicating better perceived health status. Scores were combined to obtain two aggregate scores: the *Physical Component Summary* (PCS) score and the *Mental Component Summary* (MCS) score.

Beck Depression Inventory, second edition, (BDI) is a 21-question, validated, self-report instrument that measures the severity of depressive symptoms³⁸. Total scores range from 0 to 63, and higher scores reflect greater depressive symptoms. BDI scores ranging from 0 to 13 represent minimal depressive symptoms; scores from 14 to 19 are mild; scores from 20 to 28 are moderate; and scores from 29 to 63 represent severe depressive symptoms.

The *Perceived Stress Scale* (PSS) is a widely-used instrument for measuring the level of experienced stress, defined as the degree to which situations in one's life over the past month are appraised as unpredictable, uncontrollable, and overwhelming³⁹. It consists of 10 items, and higher scores reflect a greater degree of perceived stress.

Self-efficacy is the belief that one can successfully take action to produce a desired outcome, and was assessed using the *Arthritis*

Download English Version:

<https://daneshyari.com/en/article/5669373>

Download Persian Version:

<https://daneshyari.com/article/5669373>

[Daneshyari.com](https://daneshyari.com)