

Mind-Body Research Update May 2011

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Tai Chi exercise in patients with chronic heart failure: a randomized clinical trial.

Arch Intern Med.

2011 Apr 25;171(8):750-7. Yeh GY, McCarthy EP, Wayne PM, Stevenson LW, Wood MJ, Forman D, Davis RB, Phillips RS. From Division of General Medicine and Primary Care, Beth Israel Deaconess Medical Center, 1309 Beacon St, Second Floor, Brookline, MA 02446. gyeh@bidmc.harvard.edu

BACKGROUND: Preliminary evidence suggests that meditative exercise may have benefits for patients with chronic systolic heart failure (HF); this has not been rigorously tested in a large clinical sample. We sought to investigate whether tai chi, as an adjunct to standard care, improves functional capacity and quality of life in patients with HF.

METHODS: A single-blind, multisite, parallel-group, randomized controlled trial evaluated 100 outpatients with systolic HF (New York Heart Association class I-III, left ventricular ejection fraction $\leq 40\%$) who were recruited between May 1, 2005, and September 30, 2008. A group-based 12-week tai chi exercise program (n = 50) or time-matched education (n = 50, control group) was conducted. Outcome measures included exercise capacity (6-minute walk test and peak oxygen uptake) and disease-specific quality of life (Minnesota Living With Heart Failure Questionnaire). **RESULTS:** Mean (SD) age of patients was 67 (11) years; baseline values were left ventricular ejection fraction, 29% (8%) and peak oxygen uptake, 13.5 mL/kg/min; the median New York Heart Association class of HF was class II. At completion of the study, there were no significant differences in change in 6-minute walk distance and peak oxygen uptake (median change [first quartile, third quartile], 35 [-2, 51] vs 2 [-7, 54] meters, P = .95; and 1.1 [-1.1, 1.5] vs -0.5 [-1.2, 1.8] mL/kg/min, P = .81) when comparing tai chi and control groups; however, patients in the tai chi group had greater improvements in quality of life (Minnesota Living With Heart Failure Questionnaire, -19 [-23, -3] vs 1 [-16, 3], P = .02). Improvements with tai chi were also seen in exercise self-efficacy (Cardiac Exercise Self-efficacy Instrument, 0.1 [0.1, 0.6] vs -0.3 [-0.5, 0.2], P < .001) and mood (Profile of Mood States total mood disturbance, -6 [-17, 1] vs -1 [-13, 10], P = .01). **CONCLUSION:** Tai chi exercise may improve quality of life, mood, and exercise self-efficacy in patients with HF.

Using computerized posturography to explore the connection between BMI and postural stability in long-term tai chi practitioners

- biomed 2011. Biomed Sci Instrum. 2011;47:288-93. By Geib RW, Li H, Oggeo E, Pagnacco G, Lam P, Moga M, Waite G. from Dept of Microbiology and Immunology, Indiana University School of Medicine, Terre Haute, Indiana.

Abstract: Obesity is a major health concern and cancer. Another less studied outcome is the observed increase in the incidence of accidental falls. According to CDC, medical costs associated with fall injuries exceeded \$16 billion in 2000 and by 2020 will exceed \$54 billion. To reduce the impact on society and individuals, it is essential to explore mechanisms to reduce the frequency of falls. For example, a short 12-week intervention of Tai Chi

reduced the risk of accidental falls in an elderly population. However, there are few studies exploring the effect of the long-term practice of Tai Chi on postural stability, particularly in individuals with a BMI greater than 30. In this study, the connection between postural stability and BMI in long-term Tai Chi practitioners is investigated using a convenience sample study design. Participants at a 1-week Tai Chi workshop held in June of 2010 were contacted and forty-four individuals attending the workshop enrolled in the study (ranging in age from 22 to 84, mean age 61). The participants' weight distribution was similar to the general population with 38% having a BMI less than 25. Comparison between the normal and obese groups indicated that there were no differences in stability scores in the most challenging category: standing on a compliant surface with eyes closed. Additional studies are needed to determine whether Tai Chi is as an effective intervention to prevent falls in the obese population.

Interventions for addressing low balance confidence in older adults: a systematic review and meta-analysis.

Age Ageing. 2011 May;40(3):297- 306. Rand D, Miller WC, Yiu J, Eng JJ. From Department of Occupational Therapy, School of Health Professions, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel. BACKGROUND: low balance confidence is a major health problem among older adults restricting their participation in daily life.

OBJECTIVES: to determine what interventions are most effective in increasing balance confidence in older adults. Design: systematic review with meta-analysis of randomised controlled trials including at least one continuous end point of balance confidence. Studies, including adults 60 years or older without a neurological condition, were included in our study. METHODS: the standardised mean difference (SMD) of continuous end points of balance confidence was calculated to estimate the pooled effect size with random-effect models. Methodological quality of trials was assessed using the Physical Therapy Evidence Database (PEDro) Scale. RESULTS: thirty studies were included in this review and a meta-analysis was conducted for 24 studies. Interventions were pooled into exercise (n = 9 trials, 453 subjects), Tai Chi (n = 5 trials, 468 subjects), multifactorial intervention (n = 10 trials, 1,233 subjects). Low significant effects were found for exercise and multifactorial interventions (SMD 0.22-0.31) and medium (SMD 0.48) significant effects were found for Tai Chi. CONCLUSION: Tai chi interventions are the most beneficial in increasing the balance confidence of older adults.

Interim follow-up of a randomized controlled trial comparing Chinese style mind body (Tai Chi) and stretching exercises on cognitive function in subjects at risk of progressive cognitive decline.

Int J Geriatr Psychiatry. 2011 Jul;26(7):733- 40. Lam LC, Chau RC, Wong BM, Fung AW, Lui VW, Tam CC, Leung GT, Kwok TC, Chiu HF, Ng S, Chan WM. From Department of Psychiatry, the Chinese University of Hong Kong, China. cwlam@cuhk.edu.hk .

OBJECTIVES: We reported the interim findings of a randomized controlled trial (RCT) to examine the effects of a mind body physical exercise (Tai Chi) on cognitive function in Chinese subjects at risk of cognitive decline. SUBJECTS: 389 Chinese older persons with either a Clinical Dementia Rating (CDR 0.5) or amnesic-MCI participated in an exercise program. The exercise intervention lasted for 1 year; 171

subjects were trained with 24 forms simplified Tai Chi (Intervention, I) and 218 were trained with stretching and toning exercise (Control, C). The exercise comprised of advised exercise sessions of at least three times per week. RESULTS: At 5th months (2 months after completion of training), both I and C subjects showed an improvement in global cognitive function, delayed recall and subjective cognitive complaints (paired t-tests, $p < 0.05$). Improvements in visual spans and CDR sum of boxes scores were observed in I group (paired t-tests, $p < 0.001$). Three (2.2%) and 21(10.8%) subjects from the I and C groups progressed to dementia (Pearson chi square = 8.71, OR = 5.34, 95% CI 1.56-18.29). Logistic regression analysis controlled for baseline group differences in education and cognitive function suggested I group was associated with stable CDR (OR = 0.14, 95%CI = 0.03-0.71, $p = 0.02$). CONCLUSIONS: Our interim findings showed that Chinese style mind body (Tai Chi) exercise may offer specific benefits to cognition, potential clinical interests should be further explored with longer observation period. the MM group would exhibit enhanced alpha power modulation in a localized representation in the primary somatosensory neocortex in response to a cue, as compared to participants in the control group. Healthy subjects were randomized to 8-weeks of MM training or a control group. Using magnetoencephalographic (MEG) recording of the SI finger representation, we found meditators demonstrated enhanced alpha power modulation in response to a cue. This finding is the first to show enhanced local alpha modulation following sustained attentional training, and implicates this form of enhanced dynamic neural regulation in the behavioral effects of meditative practice.

Mindfulness- Based Stress Reduction and Mindfulness- Based Cognitive Therapy – a systematic review of randomized controlled trials.

Acta Psychiatr Scand. 2011 Apr 28. By Fjorback LO, Arendt M, Ornbøl E, Fink P, Walach H. from The Research Clinic for Functional Disorders and Psychosomatics, Aarhus University Hospital, Aalborg Unit for Psychiatric Research, Aarhus University Hospital, Aalborg, Denmark Institute for Transcultural Health Studies, European University Viadrina, Frankfurt, Germany.

Objective: Systematic searches of Medline, PsycInfo and Embase for MBSR and MBCT. Method: were performed in October 2010. MBSR, MBCT and Mindfulness Meditation were key words. Only randomized controlled trials (RCT) using the standard MBSR/MBCT The search programme with a minimum of 33 participants were included. Results: produced 72 articles, of which 21 were included. MBSR improved mental health in 11 studies compared to wait list control or treatment as usual (TAU) and was as efficacious as active control group in three studies. MBCT reduced the risk of depressive relapse in two studies compared to TAU and was equally efficacious to TAU or an active control group in two studies. Overall, studies showed medium effect sizes. Among other limitations are lack of active control group and Evidence supports that MBSR long-term follow-up in several studies. Conclusion: improves mental health and MBCT prevents depressive relapse. Future RCTs should apply optimal design including active treatment for comparison, properly trained instructors and at least one-year follow-up. Future research should primarily tackle the question of whether mindfulness itself is a decisive ingredient by controlling against other active control conditions or true treatments.

Becoming connected: the lived experience of yoga participation after stroke.

Disabil Rehabil.

2011 Apr 21. by Garrett R, Immink MA, Hillier S. from School of Education, University of South Australia, Adelaide, South Australia, Australia,

To investigate the personal experiences and perceived outcomes of a yoga. Purpose: This article reports on a preliminary programme for stroke survivors. Method: study using qualitative methods to investigate the personal experiences and perceived outcomes of a yoga programme. Nine individuals who had experienced stroke were interviewed following a 10-week yoga programme involving movement, breathing and meditation practices. An interpretative phenomenological approach was used to determine meanings attached to yoga participation as well as Interpretative themes evolving from the data perceptions of outcomes. Results were organised around a bio-psychosocial model of health benefits from yoga. Emergent themes from the analysis included: greater sensation; feeling calmer and becoming connected. These themes respectively revealed perceived physical improvements in terms of strength, range of movement or walking ability, an improved sense of calmness and the possibility for reconnecting and accepting The study has generated original findings that different body. Conclusion suggest that from the perspective of people who have had a stroke yoga participation can provide a number of meaningful physical, psychological and social benefits and support the rationale for incorporating yoga and meditation-based practices into rehabilitation programmes.

Investigation of standard care versus sham reiki placebo versus actual reiki therapy to enhance comfort and well-being in a chemotherapy infusion center.

Oncol Nurs Forum. 2011 May

1;38(3):E212- 20. by Catlin A, Taylor-Ford RL. From School of Nursing, Sonoma State University, Rohnert Park, CA.

Purpose/Objectives: To determine whether provision of Reiki therapy during outpatient chemotherapy is associated with increased comfort and well-being. Design: Double-blind, randomized clinical controlled trial. Setting: Outpatient chemotherapy center. Sample: 189 participants were randomized to actual Reiki, sham Reiki placebo, or standard care. Methods: Patients receiving chemotherapy were randomly placed into one of three groups. Patients received either standard care, a placebo, or an actual Reiki therapy treatment. A demographic tool and pre- and post-tests were given before and after chemotherapy infusion. Main Research Variables: Reiki therapy, sham Reiki placebo therapy, standard care, and self-reported levels of comfort and well-being pre- and postintervention. Findings: Although Reiki therapy was statistically significant in raising the comfort and well-being of patients post-therapy, the sham Reiki placebo also was statistically significant. Patients in the standard care group did not experience changes in comfort and well-being during their infusion session. Conclusions: The findings indicate that the presence of an RN providing one-on-one support during chemotherapy was influential in raising comfort and well-being levels, with or without an attempted healing energy field. Implications for Nursing: An attempt by clinic nurses to provide more designated one-to-one presence and support for patients while receiving their chemotherapy infusions could increase patient comfort and well-being.

Body Awareness: a phenomenological inquiry into the common ground of mind-body therapies.

Philos Ethics Humanit Med. 2011 Apr 7;6(1):6. by Mehling WE, Wrubel J, Daubenmier J, Price CJ, Kerr CE, Silow T, Gopisetty V, Stewart AL.

ABSTRACT: Enhancing body awareness has been described as a key element or a mechanism of action for therapeutic approaches often categorized as mind-body approaches, such as yoga, TaiChi, Body-Oriented Psychotherapy, Body Awareness Therapy, mindfulness based therapies/ meditation, Feldenkrais, Alexander Method, Breath Therapy and others with reported benefits for a variety of health conditions. To better understand the conceptualization of body awareness in mind-body therapies, leading practitioners and teaching faculty of these approaches were invited as well as their patients to participate in focus groups. The qualitative analysis of these focus groups with representative practitioners of body awareness practices, and the perspectives of their patients, elucidated the common ground of their understanding of body awareness. For them body awareness is an inseparable aspect of embodied self awareness realized in action and interaction with the environment and world. It is the awareness of embodiment as an innate tendency of our organism for emergent self-organization and wholeness. The process that patients undergo in these therapies was seen as a progression towards greater unity between body and self, very similar to the conceptualization of embodiment as dialectic of body and self described by some philosophers as being experienced in distinct developmental levels.

Heart rate variability changes during high frequency yoga breathing and breath awareness.

Biopsychosoc Med. 2011 Apr 13;5(1):4. by Telles S, Singh N, Balkrishna A.

ABSTRACT: BACKGROUND: Pre and post comparison after one minute of high frequency yoga breathing (HFYB) suggested that the HFYB modifies the autonomic status by increasing sympathetic modulation, but its effect during the practice was not assessed. METHODS: Thirty-eight male volunteers with group average age +/- S.D., 23.3 +/- 4.4 years were each assessed on two separate days in two sessions, (i) HFYB and (ii) breath awareness. Each session was for 35 minutes, with 3 periods, i.e., pre (5 minutes), during HFYB or breath awareness (15 minutes) and post (5 minutes). RESULTS: There was a significant decrease in NN50, pNN50 and the mean RR interval during and after HFYB and after breath awareness, compared to the respective 'pre' values ($p < 0.05$) (repeated measures ANOVA followed by post-hoc analysis). The LF power increased and HF power decreased during and after breath awareness and LF/HF ratio increased after breath awareness ($p < 0.05$). CONCLUSION: The results suggest that there was reduced parasympathetic modulation during and after HFYB and increased sympathetic modulation with reduced parasympathetic modulation during and after breath awareness.

Effect of one week of yoga on function and severity in rheumatoid arthritis.

BMC Res Notes. 2011 Apr 12;4:118. By Telles S, Naveen KV, Gaur V, Balkrishna A. from Patanjali Research Foundation, Patanjali Yogpeeth, Haridwar, India. shirleytelles@gmail.com.

BACKGROUND: Previous studies have shown that yoga practice improved the hand grip strength in patients with rheumatoid arthritis (RA).

FINDINGS: Sixty-four participants with RA (group average age \pm S.D., 46.5 \pm 9.6 years; 47 females) were assessed at the beginning and end of a one week yoga program. The Stanford Health Assessment Questionnaire (HAQ), hand grip strength, rheumatoid factor, and C-reactive protein levels were assessed on the first and last day and compared using a

t-test for paired data. All participants showed reduced disability scores of the HAQ and rheumatoid factor levels, with an increase in bilateral hand grip strength in male participants alone. CONCLUSIONS: This single group study indicated that a brief intensive yoga program was beneficial in RA, with decreased disability, better functionality and changes in the rheumatoid factor levels suggesting improvement. <http://www.biomedcentral.com/1756-0500/4/118>

Effects of mindfulness meditation training on anticipatory alpha modulation in primary somatosensory cortex. Brain Res Bull.

2011 Apr 8. [Epub ahead of print] by Kerr CE, Jones SR, Wan Q, Pritchett DL, Wasserman RH, Wexler A, Villanueva JJ, Shaw JR, Lazar SW, Kaptchuk TJ, Littenberg R, Hämäläinen MS, Moore CI. From Harvard Osher Research Center, Harvard Medical School, Boston, MA 02215, USA. During selective attention, ~7-14Hz alpha rhythms are modulated in early sensory cortices, suggesting a mechanistic role for these dynamics in perception. Here, we investigated whether alpha modulation can be enhanced by "mindfulness" meditation (MM), a program training practitioners in sustained attention to body and breath-related sensations. We hypothesized that participants in the MM group would exhibit enhanced alpha power modulation in a localized representation in the primary somatosensory neocortex in response to a cue, as compared to participants in the control group. Healthy subjects were randomized to 8-weeks of MM training or a control group. Using magnetoencephalographic (MEG) recording of the SI finger representation, we found meditators demonstrated enhanced alpha power modulation in response to a cue. This finding is the first to show enhanced local alpha modulation following sustained attentional training, and implicates this form of enhanced dynamic neural regulation in the behavioral effects of meditative practice.