

1. Systematic Review OR Meta Analysis AND DMT

Plus hand search

(compiled 2019-02-28 by Iris Bräuninger, unsystematically expanded:

2019-07-17 by Iris Bräuninger

2020-11-22 by David Melchert & Iris Bräuninger)

Abraha, I., Rimland, J. M., Trotta, F. M., Dell'Aquila, G., Cruz-Jentoft, A., Petrovic, M., ... & Cherubini, A. (2017). Systematic review of systematic reviews of non-pharmacological interventions to treat behavioural disturbances in older patients with dementia. The SENATOR-OnTop series. *BMJ open*, 7(3), e012759.

Abstract. Objective: To provide an overview of non-pharmacological interventions for behavioural and psychological symptoms in dementia (BPSD).

Design Systematic overview of reviews:

Data sources. PubMed, EMBASE, Cochrane Database of Systematic Reviews, CINAHL and PsycINFO (2009–March 2015).

Eligibility criteria. Systematic reviews (SRs) that included at least one comparative study evaluating any non-pharmacological intervention, to treat BPSD.

Data extraction. Eligible studies were selected and data extracted independently by 2 reviewers.

The AMSTAR checklist was used to assess the quality of the SRs.

Data analysis. Extracted data were synthesised using a narrative approach.

Results. 38 SRs and 142 primary studies were identified, comprising the following categories of non-pharmacological interventions: (1) sensory stimulation interventions (12 SRs, 27 primary studies) that encompassed: acupuncture, aromatherapy, massage/touch therapy, light therapy and sensory garden; (2) cognitive/emotion-oriented interventions (33 SRs; 70 primary studies) that included cognitive stimulation, music/dance therapy, dance therapy, snoezelen, transcutaneous electrical nerve stimulation, reminiscence therapy, validation therapy, simulated presence therapy; (3) behaviour management techniques (6 SRs; 32 primary studies) and (4) other therapies (5 SRs, 12 primary studies) comprising exercise therapy, animal-assisted therapy, special care unit and dining room environment-based interventions. Music therapy was effective in reducing agitation (SMD, -0.49; 95% CI -0.82 to -0.17; $p=0.003$), and anxiety (SMD, -0.64; 95% CI -1.05 to -0.24; $p=0.002$). Home-based behavioural management techniques, caregiver-based interventions or staff training in communication skills, person-centred care or dementia care mapping with supervision during implementation were found to be effective for symptomatic and severe agitation.

Conclusions. A large number of non-pharmacological interventions for BPSD were identified. The majority of the studies had great variation in how the same type of intervention was defined and applied, the follow-up duration, the type of outcome measured, usually with modest sample size. Overall, music therapy and behavioural management techniques were effective for reducing BPSD.

Archer, S., Buxton, S., & Sheffield, D. (2015). The effect of creative psychological interventions on psychological outcomes for adult cancer patients: a systematic review of randomised controlled trials. *Psycho-Oncology*, 24(1), 1-10.

Abstract. Objective. This systematic review examined the effectiveness of creative psychological interventions (CPIs) for adult cancer patients. In particular, the findings of randomised controlled trials of art, drama, dance/movement and music therapies on psychological outcomes were examined.

Methods. The review yielded 10 original studies analysing data from a total of 488 patients. Data extraction and quality assessment were conducted by two independent reviewers.

Results. Four of the papers focused on the use of art therapy, three studies used music therapy, one paper utilised dance therapy, one study used dance/movement therapy and the remaining paper used creative arts therapies, which was a combination of different art-based therapy approaches. Eight papers focused solely on breast cancer patients, and the remaining studies included mixed cancer sites/stages. The studies reported improvements in anxiety and depression, quality of life, coping, stress, anger and mood.

However, few physical benefits of CPIs were reported; there was no significant impact of a CPI on physical aspects of quality of life, vigour-activity or fatigue-inertia or physical functioning. One study was assessed as high quality, seven studies were assessed as satisfactory and two studies were assessed to be of poorer quality.

Conclusions. There is initial evidence that CPIs benefit adult cancer patients with respect to anxiety and depression, quality of life, coping, stress, anger and mood; there was no evidence to suggest that any one type of CPI was especially beneficial. However, more and better quality research needs to be conducted, particularly in the areas of drama and dance/movement therapies.

Baker, F. A., Metcalf, O., Varker, T., & O'Donnell, M. (2018). A systematic review of the efficacy of creative arts therapies in the treatment of adults with PTSD. *Psychological Trauma: Theory, Research, Practice, and Policy*, 10(6), 643-651.

Abstract. Objective: There is a growing body of literature supporting the use of creative arts therapies; however, the efficacy of creative arts therapies in the treatment of posttraumatic stress disorder (PTSD) has not been systematically evaluated. The aim of this systematic review was to examine the efficacy of creative arts therapy including music therapy, art therapy, dance/movement therapy, and drama therapy, in the treatment of PTSD. **Method:** Ten databases were searched for peer-reviewed literature published from inception to December 2016. Studies were included in the review if they used a randomized controlled trial (RCT), a pseudo RCT, or a controlled study design; tested the efficacy of one of the creative arts therapies described above; and reported changes to PTSD diagnosis or symptomatology.

Results: From an initial yield of 1,918 records, 1,653 records were screened on title and abstract and 125 were screened at full-text. Seven studies met the inclusion criteria for review, with four studies investigating art therapy, two studies investigating music therapy, and a final study investigating drama therapy. Individual studies were initially rated on a standardized quality and bias checklist, and then GRADE was used to rate the overall evidence for each intervention. The evidence for music therapy, art therapy, and drama therapy was ranked as low to very low, with no studies found for dance/movement therapy. Generally, the quality of the trials was very poor. Future directions for this field of research are to improve the scientific quality of the research trials in this area.

Beard, R. L. (2012). Art therapies and dementia care: A systematic review. *Dementia*, 11(5), 633-656.

Abstract. Despite steadfast interest in the use of arts therapies (ATs) with individuals who have dementia of the Alzheimer's type (DAT), a systematic review of the literature has not been conducted. This paper aims to critique this evidence base, including music, visual arts, drama, and dance/movement therapies between the years 1990 and 2010, and make suggestions on how it can be strengthened. The review addresses four questions: (1) What is the focus of the empirical base on using AT with persons who have DAT? (2) (How) have these studies been designed and evaluated? (3) What findings are reported? (4) What does this tell us about the potential of AT for enriching the lives of people with dementia? This analysis reveals that systematically designed, documented, and evaluated AT studies are scarce. Information on research design, operational concepts, measurement tools, and methods of evaluation/analysis are vague, if provided. Disagreement exists about the utilization of theoretical concepts and measurement/evaluation tools. The evidence base is further divided between studies focusing on the 'product' versus the 'process' of art. Shortcomings in dementia-specific research include a paucity of accounts from participants, failure to extend therapies to individuals in the early stages, a lack of application to those living at home, and often superficial attention to the meaningful aspects of doing art. Models investigating subjective well-being, or 'enrichment,' rather than objectively measured biomedical approaches privileging the management of deficits, would expand the evidence base and help ensure that those with dementia receive the services they want, since strictly allopathic methodologies will continue to fall short of adequately evaluating what are deeply idiosyncratic psychosocial issues. Keywords. Alzheimer's disease, art therapy, dementia, quality of life

Bidonde, J., Boden, C., Kim, S., Busch, A. J., Goes, S. M., & Knight, E. (2018). Scoping review of dance for adults with fibromyalgia: what do we know about it?. *JMIR rehabilitation and assistive technologies*, 5, e10033.

Abstract. Background. Fibromyalgia is a chronic disorder characterized by widespread muscular tenderness, pain, fatigue, and cognitive difficulties. Nonpharmacological treatment options, such as physical activity, are important for people with fibromyalgia. There are strong recommendations to support engagement in physical activity for symptom management among adults with fibromyalgia. Dance is a mode of physical activity that may allow individuals with fibromyalgia to improve their physical function, health, and well-being. Dance has the potential to promote improved pain processing while simultaneously providing the health and social benefits of engaging in physical activity that contributes to symptom management and overall function rehabilitation. However, we are unaware of current evidence on dance as a nonpharmacological/physical activity intervention for adults with fibromyalgia.

Objective. The aims of this study were to understand how dance is used therapeutically by individuals with fibromyalgia; to examine the extent, range and nature of research activity in the area; and to determine the value of undertaking a systematic review of interventions.

Methods. We used and adapted the Arksey and O'Malley scoping framework. The search strategy involved a comprehensive search of main health and electronic social databases, trial registries and grey literature without language limits. Pairs of reviewers independently screened and extracted data and evaluated the methodological quality of randomized control trials.

Results. Twenty-one unique records for 13 studies met inclusion criteria; the studies included mostly middle-aged women. Types of dance included were aerobic dance, belly dance, dance movement therapy, bionanza and Zumba. Intervention parameters were different among studies. Frequency varied between one to three times a week; all were done in small group settings. Studies evaluated a variety of outcomes in the symptoms, wellness, psychosocial, physical functioning, balance and fitness categories; no studies evaluated the safety or adverse events systematically which is a major weakness of the literature.

Conclusions. There are few studies in the field of dance and fibromyalgia, suggesting research is in its infancy but slowly growing. They are of European and South American origin, focusing on female participants and a limited number of dance modes. Because the body of literature is small, of low quality and highly heterogeneous, we concluded that a systematic review of interventions on dance is not warranted at this time.

Keywords: fibromyalgia, exercise, dancing, scoping review, adult

Boehm, K., Cramer, H., Staroszynski, T., & Ostermann, T. (2014). Arts therapies for anxiety, depression, and quality of life in breast cancer patients: a systematic review and meta-analysis. *Evidence-Based Complementary and Alternative Medicine*, 2014.

Abstract. Background. Breast cancer is one of the most common types of cancer. However, only a few trials assess the effects of arts therapies. Material and Methods. We searched the Cochrane Central Register of Controlled Trials, PubMed, and Google Scholar from their start date to January 2012. We handsearched reference lists and contacted experts. All randomized controlled trials, quasi-randomized trials, and controlled clinical trials of art interventions in breast cancer patients were included. Data were extracted and risk of bias was assessed. Meta-analyses were performed using standardized mean differences. Results. Thirteen trials with a total of 606 patients were included. Arts therapies comprised music therapy interventions, various types of art therapy, and dance/movement therapies. The methodological quality ranged from poor to high quality with the majority scoring 3 of 4 points on the Jadad scale. Results suggest that arts therapies seem to positively affect patients' anxiety (standardized mean difference: -1.10 ; 95% confidence interval: -1.40 to -0.80) but not depression or quality of life. No conclusion could be drawn regarding the effects of arts therapy on pain, functional assessment, coping, and mood states. Discussion. Our review indicates that arts interventions may have beneficial effects on anxiety in patients with breast cancer.

Bradt, J., Shim, M., & Goodill, S. W. (2015). Dance/movement therapy for improving psychological and physical outcomes in cancer patients. *Cochrane Database of Systematic Reviews*, (1).

Abstract. Background. Current cancer care increasingly incorporates psychosocial interventions. Cancer patients use dance/movement therapy to learn to accept and reconnect with their bodies, build new self-confidence, enhance self-expression, address feelings of isolation, depression, anger and fear and to strengthen personal resources.

Objectives. To update the previously published review that examined the effects of dance/movement therapy and standard care versus standard care alone or standard care and other interventions on psychological and physical outcomes in patients with cancer.

Search methods. We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library 2014, Issue 6), MEDLINE (OvidSP, 1950 to June week 4, 2014), EMBASE (OvidSP, 1980 to 2014 week 26), CINAHL (EBSCOhost, 1982 to July 15 2014), PsycINFO (EBSCOhost, 1806 to July 15 2014), LILACS (Virual Health Library, 1982 to July 15 2014), Science Citation Index (ISI, 1974 to July 15 2014), CancerLit (1983 to 2003), International Bibliography of Theatre and Dance (1989 to July 15 2014), the National Research Register (2000 to September 2007), Proquest Digital Dissertations, ClinicalTrials.gov, and Current Controlled Trials (all to July 15 2014). We handsearched dance/movement therapy and related topics journals, reviewed reference lists and contacted experts. There was no language restriction.

Selection criteria. We included all randomized and quasi-randomized controlled trials of dance/movement therapy interventions for improving psychological and physical outcomes in patients with cancer. We considered studies only if dance/movement therapy was provided by a formally trained dance/movement therapist or by trainees in a formal dance/movement therapy program.

Data collection and analysis. Two review authors independently extracted the data and assessed the methodological quality, seeking additional information from the trial researchers when necessary. Results were presented using standardized mean differences.

Main results. We identified one new trial for inclusion in this update. In total, the evidence for this review rests on three studies with a total of 207 participants.

We found no evidence for an effect of dance/movement therapy on depression (standardized mean difference (SMD) = 0.02, 95% confidence interval (CI) -0.28 to 0.32, $P = 0.89$, $I^2 = 0\%$) (two studies, $N = 170$), stress (SMD = -0.18, 95% CI -0.48 to 0.12, $P = 0.24$, $I^2 = 0\%$) (two studies, $N = 170$), anxiety (SMD = 0.21, 95% CI -0.09 to 0.51 $P = 0.18$, $I^2 = 0\%$) (two studies, $N = 170$), fatigue (SMD = -0.36, 95% -1.26 to 0.55, $P = 0.44$, $I^2 = 80\%$) (two studies, $N = 170$) and body image (SMD = -0.13, 95% CI -0.61 to 0.34, $P = 0.58$, $I^2 = 0\%$) (two studies, $N = 68$) in women with breast cancer. The data of one study with moderate risk of bias suggested that dance/movement therapy had a large beneficial effect on 37 participants' quality of life (QoL) (SMD = 0.89, 95% CI 0.21 to 1.57). One study with a high risk of bias reported greater improvements in vigor and greater reduction in somatization in the dance/movement therapy group compared to a standard care control group ($N = 31$). The individual studies did not find support for an effect of dance/movement therapy on mood, mental health, and pain. It is unclear whether this was due to ineffectiveness of the treatment, inappropriate outcome measures or limited power of the trials. Finally, the results of one study did not find evidence for an effect of dance/movement therapy on shoulder range of motion (ROM) or arm circumference in 37 women who underwent a lumpectomy or breast surgery. However, this was likely due to large within-group variability for shoulder ROM and a limited number of participants with lymphedema. Two studies presented moderate risk of bias and one study high risk of bias. Therefore, overall, the quality of the evidence is very low.

Authors' conclusions. We did not find support for an effect of dance/movement therapy on depression, stress, anxiety, fatigue and body image . The findings of individual studies suggest that dance/movement therapy may have a beneficial effect on QoL, somatization, and vigor. However, the limited number of studies prevents us from drawing conclusions concerning the effects of dance/movement therapy on psychological and physical outcomes in cancer patients.

(Bräuninger, I. (2017). Tanztherapie in der Krebsbehandlung: Forschungsstand und Anwendung bei

Erwachsenen, Kindern und Jugendlichen [Dance therapy in cancer treatment: Research and application in adults, children, and adolescents]. *Zeitschrift für Sportpsychologie*, 24(2), 54-64.

Zusammenfassung. Dieser Artikel bietet eine Übersicht zum Forschungsstand zu Tanztherapie bei Krebs. Der erste Teil widmet sich der theoretischen Fundierung der Tanztherapie im onkologischen Setting. Der zweite Teil fasst wissenschaftliche Erkenntnisse aus Tanztherapie Studien in der onkologischen Behandlung zusammen. Abschließend werden Einsatzmöglichkeiten während verschiedener Phasen der Behandlung mit entsprechenden tanztherapeutischen Behandlungszielen aus den Studienergebnissen abgeleitet. Die Literaturrecherche ergab, dass Tanztherapie in allen Phasen der Krebsbehandlung eingesetzt wird mit dem Ziel, den emotionalen, sozialen, physischen und spirituellen Zustand der Patientinnen und Patienten zu verbessern. Zukünftige randomisierte kontrollierte Trials könnten die Wirksamkeit spezifischer tanztherapeutischer Interventionen während unterschiedlicher Behandlungsphasen auf Symptome und bei Männern und Kindern untersuchen.

Schlüsselwörter: Tanztherapie, Krebs, Forschungsstand, Embodiment

Abstract. This article provides an overview of the research and application of dance movement therapy in cancer treatment. The first part is devoted to the theoretical foundation of dance movement therapy in the oncological setting. The second part summarizes scientific findings from dance movement therapy studies in oncological treatment. The last part highlights the application during different treatment phases and corresponding treatment goals. One finding from the literature review was that dance movement therapy was provided in all phases of treatment to improve emotional, social, physical, and spiritual outcomes of cancer patients. Further randomized controlled trials could evaluate the efficacy of specific dance movement therapy interventions in different treatment phases on various symptoms and on men and children.

Key words: dance movement therapy, cancer, research, embodiment) (not a systematic review but current overview of literature)

Bruyneel, A. V. (2019). Effects of dance activities on patients with chronic pathologies: scoping review. *Heliyon*, 5(7), e02104.

Introduction. Physical inactivity often accompanies chronic pathologies. This induces a sedentariness that favors complications and patient isolation. There is a growing scientific interest in the practice of art, for such activities leave the usual healthcare framework and include the World Health Organization (WHO)'s three dimensions of health. Dance is a universal activity that has been identified as healthy. This scoping review's aim is to study the benefits, modalities and risks of dance for persons with a chronic pathology. **Method.** The literature research was conducted in English and French, using PubMed and Kinedoc's databases, and keywords related to dance and chronic pathologies. Dance activities that did not involve a dance instructor or a trained health professional were excluded. Studies' location and design, the chosen type of dance, pathologies, the number of subjects, modalities, intended effects and adverse effects were then studied. **Results.** 51 studies were included in this work. 47.5% were RCTs and 47% originate from North America. The number of published studies is strongly increasing. Sixteen different pathologies were studied, with a large predominance of neurology diseases. Targeted effects were the impacts on mental health, quality of life, physical and motor capacities and pathology-specific symptoms.

Dance activities are deemed feasible, and no adverse effects were identified. **Discussion.** In the event of chronic pathologies, practicing dance is possible; it is stimulating and effective against sedentariness and its adverse effects. Patient adherence is good, and dance seems to respond to the multidimensional component of chronic diseases, while offering unlimited adaptation to patients' physical and cognitive impairments. There are few studies yet, and their methodological quality is moderate, which is why further research work must confirm dance's interest regarding chronic pathologies.

Caldwell, C., & Victoria, H. K. (2011). Breathwork in body psychotherapy: Towards a more unified theory and practice. *Body, Movement and Dance in Psychotherapy*, 6(2), 89-101.

Abstract: The use of conscious breathing practices for the purpose of physical, psychological, emotional, and spiritual healing has a long and extremely varied history, yet little work has been done to see if these practices can be brought into a coherent and unified form that contributes to the field of body psychotherapy. This article attempts to meta-analyse the literature and research on breathwork in psychotherapy, with an emphasis on body psychotherapy, and to find common themes so that a general theory of breathwork and guidelines for practice might be developed. This paper provides an overview of the physiology of breathing, a review of the literature on breathwork.

Keywords: breath, breathwork, body psychotherapy, conscious breathing, breathing therapy

Carapellotti, A. M., Stevenson, R., & Dumas, M. (2020). The efficacy of dance for improving motor impairments, non-motor symptoms, and quality of life in Parkinson's disease: A systematic review and meta-analysis. *PloS one*, 15(8), e0236820.

Dance may help individuals living with Parkinson's disease (PD) improve motor and non-motor symptoms that impact quality of life (QOL). The primary aim of this systematic review of randomized controlled trials (RCTs) was to evaluate the efficacy of dance in improving motor and non-motor symptoms of PD and QOL. The secondary aims of this review were to evaluate the methodological quality of included studies by assessing risk of bias across nine categories and to inform the direction of future research. Peer-reviewed RCTs that included people living with PD at all disease stages and ages and measured the effects of a dance intervention longer than one day were included. Sixteen RCTs involving 636 participants with mild to moderate PD were eligible for inclusion in the qualitative synthesis and nine in the meta-analysis. Overall, the reviewed evidence demonstrated that dance can improve motor impairments, specifically balance and motor symptom severity in individuals with mild to moderate PD, and that more research is needed to determine its effects on non-motor symptoms and QOL. RCTs that use a mixed-methods approach and include larger sample sizes will be beneficial in fully characterizing effects and in determining which program elements are most important in bringing about positive, clinically meaningful changes in people with PD.

Conceição, L. S. R., Neto, M. G., do Amaral, M. A. S., Martins-Filho, P. R. S., & Carvalho, V. O. (2016). Effect of dance therapy on blood pressure and exercise capacity of individuals with hypertension: A systematic review and meta-analysis. *International journal of cardiology*, 220, 553-557.

Abstract. Background. Dance therapy is a less conventional modality of physical activity in cardiovascular rehabilitation. We performed a systematic review and meta-analysis to investigate the effects of dance therapy in hypertensive patients.

Methods. Pubmed, Scopus, LILACS, IBECs, MEDLINE and SciELO via Virtual Health Library (Bireme) (from the earliest data available to February 2016) for controlled trials that investigated the effects of dance therapy on exercise capacity, systolic (SBP) and diastolic (DBP) blood pressure in hypertensive patients. Weighted mean differences (WMD) and 95% confidence intervals (CIs) were calculated, and heterogeneity was assessed using the I² test.

Results. Four studies met the eligibility criteria. Dance therapy resulted in a significant reduction in systolic blood pressure (WMD - 12.01 mm Hg; 95% CI: - 16.08, - 7.94 mm Hg; P < 0.0001) when compared with control subjects. Significant reduction in diastolic blood pressure were also found (WMD - 3.38 mm Hg; 95% CI: - 4.81, - 1.94 mm Hg; P < 0.0001), compared with control group. Exercise capacity showed a significant improvement (WMD 1.31; 95% CI: 0.16, 2.47; P < 0.03). A moderate to high heterogeneity was observed in our analysis: I² = 92% to SBP, I² = 55% to DBP, and I² = 82% to exercise capacity.

Conclusions. Our meta-analysis showed a positive effect of dance therapy on exercise capacity and reduction of SBP and DBP in individuals with hypertension. However, the moderate to high heterogeneity found in our analysis limits a pragmatic recommendation of dance therapy in individuals with hypertension.

Cherriere, C., Robert, M., Fung, K., Tremblay Racine, F., Tallet, J., & Lemay, M. (2020). Is there evidence of benefits associated with dancing in children and adults with cerebral palsy? A scoping review. *Disability & Rehabilitation*, 42(23), 3395–3402. <https://doi.org/10.1080/09638288.2019.1590866>

Purpose: Cerebral palsy is a neurological disorder not only affecting motor functions but also cognitive and psychosocial dimension. Multispecialty therapies are needed to address these dimensions. Dance practice provides multidimensional benefits for people with various neurological disorders and may present a real potential for people with cerebral palsy. A scoping review is conducted to evaluate the impact of dance in children and adults with cerebral palsy, based on the Human Development Model–Disability Creation Process 2 and its three key concepts: personal factors, environmental factors and life habits. **Materials and methods:** Studies were selected based on a systematic search of published literature in the following databases PubMed, Medline, EBM Reviews, EMBASE and CINAHL. Studies addressing any concepts on the impact of dance training on motor, cognitive and psychosocial dimensions in people with cerebral palsy were included. **Results:** Seven studies representing 45 children and 12 adults with cerebral palsy were selected. They had heterogeneous populations, protocols and outcomes measures, but overall covered the three main concepts of the model. Dance may have both motor and social benefits although the evidence remains weak. **Conclusions:** Dance appears to be a promising activity for people with cerebral palsy. Recommendations are proposed for future studies. Cerebral palsy affects motor and cognitive functions and has social repercussions. Dance can be a promising activity for people with a cerebral palsy. Dance may have both motor and social benefits although the evidence remains weak.

Cruz, R. F., & Sabers, D. L. (1998). Dance/movement therapy is more effective than previously reported (Response to Ritter & Low). *Arts in Psychotherapy*, 25(2), 105-107.

The meta-analysis of dance/movement therapy research findings by Ritter and Low (1996) (in this issue) addressed a critical need to support the effectiveness of this treatment modality. As managed-care companies invade clinical settings, dance therapists are being asked to provide empirical support for the effectiveness of their treatment. Quantitative research and quantitative integration of research findings are widely accepted as empirical evidence across many disciplines. Correspondingly, a meta-analytic aggregation of dance therapy research enhances the professional acceptance of this form of treatment by providing recognized empirical validation. A meta-analytic study, even in an area with a limited body of research, is extremely labor intensive. Unfortunately, errors of calculation and interpretation of the data were made that should be corrected in order for Ritter and Low's (1996) work to document accurately the effectiveness of dance/movement therapy.

Dirmaier, J., Krattenmacher, T., Watzke, B., Koch, U., Schulz, H., & Barghaan, D. (2010). Evidenzbasierte Behandlungselemente in der Rehabilitation von Patienten mit Depression—Eine Literaturübersicht [Evidence-Based Treatments in the Rehabilitation of Patients with Depression – A Literature Review]. *PPmP-Psychotherapie· Psychosomatik· Medizinische Psychologie*, 60(03/04), 83-97.

Zusammenfassung. Hintergrund: Leitlinien gewinnen in den letzten Jahren eine immer größer werdende Bedeutung, auch im Bereich der rehabilitativen Versorgung. Auch für den Bereich der Rehabilitation depressiver Störungen wird derzeit eine Prozessleitlinie in einem mehrstufigen Verfahren entwickelt. Ziel: Ziel dieser Arbeit ist es, im Rahmen der ersten Entwicklungsphase einer Prozessleitlinie eine graduierte Bewertung der aktuellen Evidenzlage zu verschiedenen Behandlungsmöglichkeiten bei depressiven Störungen durchzuführen.

Methode: Hierfür wurde zunächst eine umfassende Recherche nationaler und internationaler Leitlinien durchgeführt. Dreizehn selektierte Leitlinien wurden dann hinsichtlich ihrer methodischen Qualität bewertet und als Grundlage für die Identifikation evidenter Behandlungsverfahren verwendet. In einem weiteren Schritt wurden spezifische Literaturrecherchen für verbleibende, durch die Klassifikation therapeutischer Leistungen (KTL) 2007 definierte rehabilitationsrelevante Behandlungselemente, durchgeführt. Im Rahmen eines hierarchischen Vorgehens erfolgte zunächst eine Sichtung von Metaanalysen und systematischen Reviews, für weiterhin ohne Evidenz verbleibende Behandlungsbereiche wurde auf Einzelstudienebene recherchiert. Die extrahierten Übersichtsarbeiten und Primärstudien wurden dann hinsichtlich ihrer methodischen Qualität bewertet und Evidenzgrade für die Behandlungsverfahren abgeleitet.

Ergebnisse: Folgende Behandlungselemente konnten im Rahmen der Leitlinienrecherche extrahiert werden: Psychotherapeutische Verfahren, Paar-, Familien- u. Angehörigengespräch bzw. Paar- u. Familientherapie, Psychoedukation, Sport und Bewegungstherapie, Problemlösetraining, Anleitung zur Selbsthilfe und Rektionstherapie. Auf Basis der Ergebnisse der anschließenden Literaturrecherchen wurden innerhalb der folgenden übergeordneten Therapiebereiche weitere verschiedene evidente Verfahren identifiziert werden: Entspannungsverfahren, Verbesserung der sozialen Kompetenz, Ergotherapie, künstlerische Therapien (Musiktherapie, Kunsttherapie, Tanz- und Bewegungstherapie), körperpsychotherapeutische Verfahren und Massage.

Fazit: Durch das beschriebene Vorgehen konnten verschiedene Behandlungselemente mit unterschiedlichen Evidenzgraden für die Behandlung von Patienten mit Depression identifiziert werden. Die hier dargestellten Ergebnisse sollen in einem nächsten Schritt im Rahmen einer systematischen Beteiligung von Experten für die Entwicklung einer Prozessleitlinie verwendet werden.

Abstract. Background: In recent years, the importance of guidelines has increased continuously. This development also occurs in the field of rehabilitative health care, where process guidelines are being designed for various indicational groups to ensure quality standards and improvements.

Aim: The primary goal of this paper is to collect and evaluate the evidence for various treatment options for depressive disorders in order to establish a basis for the current development of a process guideline for the rehabilitation of patients with depressive disorders.

Method: In order to identify evidence based treatment elements, first a comprehensive investigation of national and international guidelines was conducted. Thirteen selected guidelines were then assessed with regard to aspects of methodological quality and evidence-based treatment elements. In a further step, literature searches were conducted for residual treatment elements, which were identified on the basis of the Classification of Therapeutic Services (KTL) 2007. For the literature search, a hierarchical approach was chosen: At first, meta-analyses and systematic reviews were viewed. In case when there was still a lack of evidence for specific, potentially relevant treatment elements, the search was expanded to the level of primary studies. All selected reviews and primary studies then underwent a standardized assessment especially regarding methodological quality and evidence grades were allocated to treatments.

Results: Thereby, the following treatment elements with an adequate level of evidence were identified: Psychotherapeutic interventions, marital/couples/family therapy and counselling, inclusion of family members, psycho education and exercise, problem solving therapy, guided self-help, and behavioural activation treatments. On the basis of this complementary literature search, various other evident interventions could be identified within the following areas: relaxation techniques, improvement of social competence, occupational therapy, art therapies (music, movement/dance therapies), body-oriented therapies and massage therapy.

Conclusion: In summary, using this hierarchical approach, it was possible to assign different levels of evidence to the various treatment elements for depression. Based on the results of this literature search, a next step in the development of a process guideline for the rehabilitative treatment of patients with depression will be the integration of experts in the field of rehabilitation.

Key words. depression - evidence-based treatment - literature review – guidelines

Fernández-Argüelles, E. L., Rodríguez-Mansilla, J., Antunez, L. E., Garrido-Ardila, E. M., & Muñoz, R. P. (2015). Effects of dancing on the risk of falling related factors of healthy older adults: a systematic review. *Archives of gerontology and geriatrics*, 60(1), 1-8.

Abstract. Introduction: Deficits of balance or postural control in persons of advanced age are one of the factors that influence the risk of falling. The most appropriate treatment approaches and their benefits are still unknown.

Objective. The aim of this article is to systematically review the scientific literature to identify the therapeutic effects of dancing as a physical exercise modality on balance, flexibility, gait, muscle strength and physical performance in older adults.

Methods. A systematic search of Pubmed, Cochrane Library Plus, PEDro, Science Direct, Dialnet and Academic Search Complete using the search terms “dance”, “older”, “dance therapy”, “elderly”, “balance”, “gait” and “motor skills”. The eligibility criteria were: studies written in English and Spanish, published from January 2000 to January 2013, studies which analyzed the effects of dance (ballroom dance and/or dance based exercise) in older adults over 60 years of age with no disabling disease and included the following variables of study: balance, gait, risk of falls, strength, functionality, flexibility and quality of life.

Results. 123 articles were found in the literature. A final selection of seven articles was used for the present manuscript. Although the selected studies showed positive effects on the risk of falling related to factors (balance, gait and dynamic mobility, strength and physical performance), there were some aspects of the studies such as the methodological quality, the small sample size, the lack of homogeneity in relation to the variables and the measurement tools, and the existing diversity regarding the study design and the type of dance, that do not enable us to confirm that dance has significant benefits on these factors based on the scientific evidence.

Subjects. Aging physiology; Dancing physiology; Gait physiology; Motor Skills physiology; Muscle Strength physiology; Postural Balance physiology; Adult: 19-44 years; Aged: 65+ years; Middle Aged: 45-64 years; All Adult: 19+ years; Female

Keywords. Dance therapy; Elderly; Balance; Gait; Older adults

Gomes Neto, M., Menezes, M. A., & Carvalho, V. O. (2014). Dance therapy in patients with chronic heart failure: a systematic review and a meta-analysis. *Clinical rehabilitation*, 28(12), 1172-1179.

Abstract. Objective: To see whether dance therapy was more effective than conventional exercise in exercise capacity and health-related quality of life (HRQOL) in patients with chronic heart failure. Design and methods: Systematic review and meta-analysis. We searched MEDLINE, Cochrane Controlled Trials Register, EMBASE, SPORT Scielo, CINAHL (from the earliest date available to August 2013) for randomized controlled trials (RCTs), examining effects of dance therapy versus exercise and/or dance therapy versus control on exercise capacity (VO₂peak), and quality-of-life (QOL) in chronic heart failure. Two reviewers selected studies independently. Weighted mean differences (WMDs) and 95% confidence intervals (CIs) were calculated, and heterogeneity was assessed using the I² test.

Results: Two studies met the study criteria (62 dance therapy patients, 60 exercise patients and 61 controls patients). The results suggested that dance therapy compared with control had a positive impact on peak VO₂ and HRQOL. Dance therapy resulted in improvement in: peak VO₂ peak weighted mean difference (4.86 95% CI: 2.81 to 6.91) and global HRQOL standardized mean differences (2.09 95% CI: 1.65 to 2.54). Non-significant difference in VO₂ peak and HRQOL for participants in the exercise group compared with dance therapy. No serious adverse events were reported.

Conclusions: Dance therapy may improve peak VO₂ and HRQOL in patients with chronic heart failure (CHF) and could be considered for inclusion in cardiac rehabilitation programmes.

Keywords: Exercise tolerance, quality of life, cardiac failure, dance

Guzmán-García, A. H. J. C., Hughes, J. C., James, I. A., & Rochester, L. (2013). Dancing as a psychosocial intervention in care homes: a systematic review of the literature. *International journal of geriatric psychiatry*, 28(9), 914-924.

Abstract. Background. There is a need to find meaningful and engaging interventions to improve mood and behaviour for residents of care homes. The demand on care staff might diminish opportunities for them to encourage these activities. Staff anecdotal information attests that dancing as an activity improves mood in residents and staff. Hence, the importance of investigating what dancing brings to the care home social environment.

Aims. To provide a systematic review of the evidence from studies related to dancing interventions for older people with dementia living in care homes.

Method. Electronic databases were searched. Previous reviews were also included, and recognised experts were consulted up to January 2012. Inclusion criteria considered study methodology and evidence that the impact of the dance intervention had been measured.

Results. Ten studies were identified that satisfied the inclusion criteria: seven qualitative and three quantitative. Studies used different approaches such as therapeutic dance, dance movement therapy, dance therapy, social dancing and psychomotor dance-based exercise. There was evidence that problematic behaviours decreased; social interaction and enjoyment in both residents and care staff improved. A few adverse effects were also acknowledged.

Conclusion. The evidence on the efficacy of dancing in care homes is limited in part owing to the methodological challenges facing such research. This review aims to raise awareness of the possibility of implementing dance work as an engaging activity in care homes. We shall also consider options for future dance work research as a means to encourage relationships and sensory stimulation for both residents and staff.

Hertrampf, R. S., & Wärja, M. (2017). The effect of creative arts therapy and arts medicine on psychological outcomes in women with breast or gynecological cancer: a systematic review of arts-based interventions. *The Arts in Psychotherapy*, 56, 93-110.

Abstract. Breast cancer and gynaecological cancer are two major diagnoses affecting women worldwide. Clinical research on arts-based approaches for these populations has gained a growing interest in the last decade with promising results. The purpose of this study was (a) to review evidence of arts-based approaches involving creative arts therapy (CAT) and arts medicine (AM) on psychological outcomes in women of both populations and (b) to evaluate the reporting of arts-based interventions. This systematic review examined randomized controlled trials and quasirandomized controlled studies with repeated measures. Researchers assessed each study for risk of bias using GRADE. A checklist called Reporting on Arts-Based Interventions was developed and applied to all studies included in this review. Researchers computed effect sizes for relevant outcomes. Searches identified 294 items producing 104 nonduplicate titles. Twenty-one items met inclusion criteria. These included a total of 1,703 participants (83.1% breast cancer, 16.9% gynecological cancer). CAT was applied in 10 papers (n = 646); AM in 11 (n = 1,057). For gynecological cancer, only two AM studies were found and no CAT studies were identified. Anxiety and depression were the most prevalent outcomes for both approaches across all studies. Overall, small to large effect sizes were found for AM studies and null to large effect sizes for CAT studies. Body image

and sexuality were scarcely addressed. Intervention reporting was inadequate. The results suggest that arts-based interventions may be effective for improving psychological outcomes for targeted populations. Research for gynecological cancer patients is recommended, as are trials aimed at improving body image and addressing sexual function and related concerns. Enhanced quality of methodology and intervention reporting are critical.

Highlights. • Lack of findings for body image and sexuality. • No trials in creative arts therapy on gynaecological cancer. • Insufficient quality in arts-based intervention reporting. • Diversity of interventions in different phases of trajectory.

Keywords. Systematic review; Psychological outcomes; Creative arts therapy; Arts medicine; Breast cancer; Gynecological cancer

Hervey, L., & Kornblum, R. (2006). An evaluation of Kornblum's body-based violence prevention curriculum for children. *The Arts in Psychotherapy, 33*(2), 113-129.

Abstract. This article describes an evaluation of the effectiveness of *Disarming the Playground* (2002), a school-based violence prevention curriculum. The program was developed and implemented by Rena Kornblum, a dance/movement therapist working in the Madison, WI public schools. *Disarming the Playground* is unique among such programs in its body-based approach. A review of the literature focuses on recent evaluations and reviews of other school-based violence prevention programs, as well as large-scale meta-analyses of and guides to such program evaluations. A mixed method evaluation of the Kornblum curriculum's effectiveness was conducted with second grade students. Statistical findings indicated significant positive outcomes, and qualitative findings pointed toward reasons for its effectiveness, as well as methods of improving evaluation and delivery of the curriculum.

Hidalgo-Agudo, R. D., Lucena-Anton, D., Luque-Moreno, C., Heredia-Rizo, A. M., & Moral-Munoz, J. A. (2020). Additional Physical Interventions to Conventional Physical Therapy in Parkinson's Disease: A Systematic Review and Meta-Analysis of Randomized Clinical Trials. *Journal of clinical medicine, 9*(4), 1038. <https://doi.org/10.3390/jcm9041038>

Parkinson's disease (PD) represents the second most common neurodegenerative disease. Currently, conventional physical therapy is complemented by additional physical interventions with recreational components, improving different motor conditions in people with PD. This review aims to evaluate the effectiveness of additional physical interventions to conventional physical therapy in Parkinson's disease. A systematic review and meta-analysis of randomized controlled trials were performed. The literature search was conducted in PubMed, Physiotherapy Evidence Database (PEDro), Scopus, SciELO and Web of Science. The PEDro scale was used to evaluate the methodological quality of the studies. A total of 11 randomized controlled trials were included in this review. Five of them contributed information to the meta-analysis. The statistical analysis showed favorable results for dance-based therapy in motor balance: (Timed Up and Go: standardized mean difference (SMD) = -1.16; 95% Confidence Interval (CI):(-2.30 to -0.03); Berg Balance Scale: SMD = 4.05; 95% CI:(1.34 to 6.75)). Aquatic interventions showed favorable results in balance confidence (Activities-Specific Balance Confidence: SMD=10.10; 95% CI:(2.27 to 17.93)). The results obtained in this review highlight the potential benefit of dance-based therapy in functional balance for people with Parkinson's disease, recommending its incorporation in clinical

practice. Nonetheless, many aspects require clarification through further research and high-quality studies on this subject.

Jiménez, J., Bräuninger, I., & Meekums, B. (2019). Dance movement therapy with older people with a psychiatric condition: A systematic review. *The Arts in Psychotherapy*, 63, 118-127.
doi:10.1016/j.aip.2018.11.008

Highlights. • Dance/Movement Therapy (DMT) may improve social interaction, communication and cognitive functions. • DMT seems to increase quality of life and expressiveness. • Methodological quality varies from low to high. • Insufficient evidence exists that DMT improves mental health disorders. • More high quality studies on the efficacy of DMT in older age psychiatry are needed.

Abstract. This systematic review assessed the published literature on dance movement therapy interventions with adults aged 60 years and older with a mental health disorder. Our objective was to identify published studies of the effects of DMT in older age psychiatry and to critically appraise methodological quality of the included studies. We searched the databases CINAHL, MEDLINE, PsycINFO, and PSYINDEX, and Google Scholar. We also searched the reference list of relevant papers in order to identify publications that were not found through the initial database search. The reviewers independently critically appraised all full text articles that met our inclusion criteria. A final 16 studies met the inclusion criteria: nine were primary studies (one randomized controlled trial, three quasi-experimental studies, and five qualitative studies) and seven were secondary studies (systematic reviews). Dementia was the subject in 15 studies, and depression in one, reflecting a possible bias in the literature. The methodological quality of the primary studies was lower than for the secondary studies.

Keywords. Dance movement therapy; Older adults; Older age psychiatry; Mental disorders; Systematic review

Kalyani, H. H. N., Sullivan, K., Moyle, G., Brauer, S., Jeffrey, E. R., Roeder, L., ... & Kerr, G. (2019). Effects of dance on gait, cognition, and dual-tasking in Parkinson's disease: a systematic review and meta-analysis. *Journal of Parkinson's disease*, 9(2), 335-349.

Dance-based interventions have been proposed for the management of Parkinson's disease (PD) symptoms. This review critically appraises and synthesises the research on the effects of dance interventions on gait, cognition and dual-tasking in PD, through a meta-analysis of peer-reviewed literature from seven databases. Eligible studies included people with PD, used a parallel-group or cohort design with a dance-based intervention, reported outcome measures of gait, cognition or dual-tasking, and were published in English up until September 2017. Of the initial 1079 articles, 677 articles were reviewed for eligibility, and 25 articles were retained. Only 12 articles had sufficient common assessment items for meta-analysis. Two independent reviewers extracted the data and assessed the risk of bias of each study using the Cochrane risk-of-bias tool. Based on pre-post change scores, gait speed, Timed Up and Go (TUG) test performance, freezing of gait questionnaire, and six-minute walk test times significantly improved after a dance intervention compared to controls. Global cognition assessed with Montreal Cognitive Assessment, and cognitive dual-tasking measured using dual-task TUG, also exhibited greater improvement in dance groups. There was limited evidence to determine the most effective intensity, frequency, duration of dance interventions or the most beneficial music. Findings must

be interpreted cautiously because of the lack of randomised control trials, and the moderate to high risk of bias of studies. However, the results of papers with level-I and level-II.1 evidence suggest that dance may have the potential to ameliorate PD symptoms, particularly gait, global cognition and cognitive dual-tasking.

Karkou, V., Aithal, S., Zubala, A., & Meekums, B. (2019). Effectiveness of Dance Movement Therapy in the Treatment of Adults with Depression: A Systematic Review with Meta-Analyses. *Frontiers in psycho*
Abstract

Background: Depression is the largest cause of mental ill health worldwide. Although interventions such as Dance Movement Therapy (DMT) may offer interesting and acceptable treatment options, current clinical guidelines do not include these interventions in their recommendations mainly because of what is perceived as insufficient research evidence. The 2015 Cochrane review on DMT for depression includes only three studies leading to inconclusive results. In a small and underfunded field such as DMT, expensive multi-centered Randomized Controlled Trials (RCTs) are as yet rare. It is therefore, necessary to not only capture evidence from RCTs, but to also look beyond such designs in order to identify and assess the range of current evidence.

Methods: We therefore conducted a systematic review of studies that aimed to explore the effectiveness in the use of DMT with people with depression. This led to a qualitative narrative synthesis. We also performed meta-analyses that calculated the effect size for all included studies, studies with RCT designs only, followed by a subgroup analysis and a sensitivity analysis. In all meta-analyses a random effects model was used with Standardized Mean Differences (SMD) to accommodate for the heterogeneity of studies and outcome measures.

Results: From the 817 studies reviewed, eight studies were identified as meeting our inclusion criteria. Three hundred and fifty one people with depression (mild to severe) participated, 192 of whom attended DMT groups while receiving treatment as usual (TAU) and 159 received TAU only. Qualitative findings suggest there was a decrease in depression scores in favor of DMT groups in all studies. Subgroup analysis performed on depression scores before and 3 months after the completion of DMT groups suggested changes in favor of the DMT groups. When sensitivity analysis was performed, RCTs at high risk of bias were excluded, leaving only studies with adult clients up to the age of 65. In these studies, the highest effect size was found favoring DMT plus TAU for adults with depression, when compared to TAU only.

Conclusions: Based on studies with moderate to high quality, we concluded that DMT is an effective intervention in the treatment of adults with depression. Furthermore, by drawing on a wide range of designs with diverse quality, we were able to compile a comprehensive picture of relevant trends relating to the use of DMT in the treatment of depression. Despite the fact that there remains a paucity of high-quality studies, the results have relevance to both policy-making and clinical practice, and become a platform for further research.

Keywords: dance movement therapy, depression, effectiveness, systematic review, meta-analysis

Karkou, V., & Meekums, B. (2017). Dance movement therapy for dementia. *Cochrane Database of Systematic Reviews*, Vol. 2; Cochrane AN: CD011022; PMID: 28155990,

Abstract. Background. Dementia is a collective name for different degenerative brain syndromes which, according to Alzheimer's Disease International, affects approximately 35.6 million people worldwide. The latest NICE guideline for dementia highlights the value of diverse treatment options for the different stages and symptoms of dementia including non-pharmacological treatments. Relevant literature also argues for the value of interventions that acknowledge the complexity of the condition and address the person as a whole, including their physical, emotional, social and cognitive processes. At the same time, there is growing literature that highlights the capacity of the arts and embodied practices to address this complexity. Dance movement therapy is an embodied psychological intervention that can address complexity and thus, may be useful for people with dementia, but its effectiveness remains unclear.

Objectives. To assess the effects of dance movement therapy on behavioural, social, cognitive and emotional symptoms of people with dementia in comparison to no treatment, standard care or any other treatment. Also, to compare different forms of dance movement therapy (e.g. Laban-based dance movement therapy, Chacian dance movement therapy or Authentic Movement).

Search methods. Searches took place up to March 2016 through ALOIS, Cochrane Dementia and Cognitive Improvement's Specialized Register, which covers CENTRAL, a number of major healthcare databases and trial registers, and grey literature sources. We checked bibliographies of relevant studies and reviews, and contacted professional associations, educational programmes and experts from around the world.

Selection criteria. We considered randomised controlled trials (RCTs) in any language, including cross-over design and cluster-RCTs for inclusion. Studies considered had to include people with dementia, in any age group and in any setting, with interventions delivered by a dance movement therapy practitioner who (i) had received formal training (ii) was a dance movement therapist in training or (iii) was otherwise recognised as a dance movement therapist in the country in which the study was conducted.

Data collection and analysis. The two review authors independently reviewed studies on an abstract/title level and again after reading the full paper, and we independently evaluated methodological quality.

Main results. Of the 102 studies identified through electronic searches and personal communication, after de-duplication we screened 80 at title/abstract level. We then reviewed 19 full papers, none of which met the inclusion criteria. Although three studies mentioned dance movement therapy as their intervention, they were excluded because they were not delivered by a qualified dance movement therapy practitioner. As a result, no studies were included in this review.

Authors' conclusions. Trials of high methodological quality, large sample sizes and clarity in the way the intervention is put together and delivered are needed to assess whether dance movement therapy is an effective intervention for dementia.

Kiepe, M. S., Stöckigt, B., & Keil, T. (2012). Effects of dance therapy and ballroom dances on physical and mental illnesses: A systematic review. *The Arts in Psychotherapy*, 39(5), 404-411.

Abstract. This systematic review aims to evaluate the effects of dance (movement) therapy and ballroom dances as therapeutic interventions for adults with physical and mental illnesses in comparison to other interventions or care as usual. A systematic literature search for randomized controlled trials examining dance therapy and ballroom dances published between 1995 and 2011 was carried out in the electronic databases MEDLINE and PsycINFO. 13 publications reporting results from 11 randomized trials

(predominantly from USA and Scandinavia) were identified with mostly small samples. They examined breast cancer (n = 2), dementia (n = 1), Parkinson's disease (n = 2), heart failure (n = 1), diabetes type 2 (n = 1), depression (n = 3) and fibromyalgia (n = 1). Dance (movement) therapy had a positive impact for patients with breast cancer, improving quality of life, shoulder range of motion and body image. In patients with depression psychological distress was reduced by dance therapy. Ballroom dances improved balance and coordination in patients with Parkinson's disease and disease-specific quality of life in patients with heart failure. Dance (movement) therapy and ballroom dances seem beneficial for patients with breast cancer, depression, Parkinson's disease, diabetes and heart failure. However, further good quality research is needed to gain more profound insight into the efficacy of these treatment options.

Highlights. ► Systematic review of dance (movement) therapy and ballroom dances as a therapeutic intervention for adults. ► 13 RCTs were identified with mostly small samples. ► Dance (movement) therapy had a positive impact for patients with breast cancer, improving quality of life as well as for patients with depression, decreasing psychological distress. ► Ballroom dances such as Tango improved balance and coordination in patients with Parkinson and cardiopulmonary training in patients with heart failure grades I and II.

Keywords. Ballroom dances; Dance; Dance (movement) therapy; Randomized controlled trials; Systematic review

Koch, S., Kunz, T., Lykou, S., & Cruz, R. (2014). Effects of dance movement therapy and dance on health-related psychological outcomes: A meta-analysis. *The Arts in Psychotherapy*, 41(1), 46-64. [Effekte von Tanztherapie und Tanzen auf gesundheitsbezogene psychologische Ergebnisse: Eine Metaanalyse Highlights. • Meta-analysis of DMT interventions and the therapeutic use of dance. • Provides a systematic summary of the last 20 years of research findings. • Includes effects of 23 evidence-based primary studies for 15 populations (N = 1078). • Shows moderate effects for quality of life and clinical outcomes (depression, anxiety). • Yields small but consistent effects for improvement of well-being, mood, affect, and body image.

Abstract. In this meta-analysis, we evaluated the effectiveness of dance movement therapy (DMT) and the therapeutic use of dance for the treatment of health-related psychological problems. Research in the field of DMT is growing, and 17 years have passed since the last and only general meta-analysis on DMT (Ritter & Low, 1996) was conducted. This study examines the current state of knowledge regarding the effectiveness of DMT and dance from 23 primary trials (N = 1078) on the variables of quality of life, body image, well-being, and clinical outcomes, with sub-analysis of depression, anxiety, and interpersonal competence. Results suggest that DMT and dance are effective for increasing quality of life and decreasing clinical symptoms such as depression and anxiety. Positive effects were also found on the increase of subjective well-being, positive mood, affect, and body image. Effects for interpersonal competence were encouraging, but due to the heterogeneity of the data remained inconclusive. Methodological shortcomings of many primary studies limit these encouraging results and, therefore, further investigations to strengthen and expand upon evidence-based research in DMT are necessary. Implications of the findings for health care, research, and practice are discussed.

Keywords: Dance movement therapy; Therapeutic use of dance; Meta-analysis; Review of evidence-based research; Randomized controlled trials; Integrative medicine

Koch, S. C., Riege, R., Tisborn, K., Biondo, J., Martin, L., & Beelmann, A. (2019). Effects of Dance Movement Therapy and Dance on Health-Related Psychological Outcomes. A Meta-Analysis Update. *Frontiers in psychology, 10*, 1806. <https://doi.org/10.3389/fpsyg.2019.01806>

Background: Dance is an embodied activity and, when applied therapeutically, can have several specific and unspecific health benefits. In this meta-analysis, we evaluated the effectiveness of dance movement therapy (DMT) and dance interventions for psychological health outcomes. Research in this area grew considerably from 1.3 detected studies/year in 1996-2012 to 6.8 detected studies/year in 2012-2018. **Method:** We synthesized 41 controlled intervention studies ($N = 2,374$; from 01/2012 to 03/2018), 21 from DMT, and 20 from dance, investigating the outcome clusters of quality of life, clinical outcomes (with sub-analyses of depression and anxiety), interpersonal skills, cognitive skills, and (psycho-)motor skills. We included recent randomized controlled trials (RCTs) in areas such as depression, anxiety, schizophrenia, autism, elderly patients, oncology, neurology, chronic heart failure, and cardiovascular disease, including follow-up data in eight studies. **Results:** Analyses yielded a medium overall effect ($d = 0.60$), with high heterogeneity of results ($I^2 = 72.62\%$). Sorted by outcome clusters, the effects were medium to large ($d = 0.53$ to $d = 0.85$). All effects, except the one for (psycho-)motor skills, showed high inconsistency of results. Sensitivity analyses revealed that *type of intervention* (DMT or dance) was a significant moderator of results. In the *DMT cluster*, the overall medium effect was small, significant, and homogeneous/consistent ($d = 0.30$, $p < 0.001$, $I^2 = 3.47$). In the *dance intervention cluster*, the overall medium effect was large, significant, yet heterogeneous/non-consistent ($d = 0.81$, $p < 0.001$, $I^2 = 77.96$). Results suggest that DMT decreases depression and anxiety and increases quality of life and interpersonal and cognitive skills, whereas dance interventions increase (psycho-)motor skills. Larger effect sizes resulted from observational measures, possibly indicating bias. Follow-up data showed that on 22 weeks after the intervention, most effects remained stable or slightly increased. **Discussion:** Consistent effects of DMT coincide with findings from former meta-analyses. Most dance intervention studies came from preventive contexts and most DMT studies came from institutional healthcare contexts with more severely impaired clinical patients, where we found smaller effects, yet with higher clinical relevance. Methodological shortcomings of many included studies and heterogeneity of outcome measures limit results. Initial findings on long-term effects are promising.

Langhorst J; Häuser W; Bernardy K; Lucius H; Settan M; Winkelmann A; Musial F. (2012). [Complementary and alternative therapies for fibromyalgia syndrome. Systematic review, meta-analysis and guideline]. *Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften, Schmerz*. ISSN: 1432-2129, Jun; Vol. 26 (3), pp. 311-7.

Abstract. The scheduled update to the German S3 guidelines on fibromyalgia syndrome (FMS) by the Association of the Scientific Medical Societies ("Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften

Subjects: Germany; Complementary Therapies methods; Fibromyalgia rehabilitation

Liu, X., Shen, P. L., & Tsai, Y. S. (2020). Dance intervention effects on physical function in healthy older adults: a systematic review and meta-analysis. *Aging clinical and experimental research*, 1-11.

Background and objective. Dancing is a form of physical exercise associated with health benefits in older adults. Regular dancing can prolong healthy aging, maintain or even improve physical function, and thus enhance their quality of life. The aim of this review was to evaluate the effects of dance intervention on physical function performance in healthy older adults in randomized-controlled trials (RCTs). Methods. Five electronic databases (Cochrane Library, PsycINFO, PubMed, Scopus, and Web of Science) were searched systematically until the end of June 2018 by two independent reviewers. These searches were limited to the English language and persons with average age older than 65. The tool from the Cochrane Collaboration was used to assess the risk of bias. A standard meta-analysis was performed using Review Manager Software version 5.3. Results. Thirteen RCTs from a total of 1029 older participants were included in this meta-analysis. The results showed that dance intervention significantly improved mobility function and endurance performance when compared with control groups for healthy older adults. However, gait was not significantly improved through dancing. Studies included in this review were not enough to perform meta-analysis for the effectiveness of dance on balance and general health in healthy older adults. Conclusion. Overall, dance intervention was effective to improve physical function performance in healthy older adults. The results from this meta-analysis strengthen the evidence from previous individual studies. Properly organized dance intervention would be a safe and effective exercise to incorporate into daily life.

Lyons, S., Karkou, V., Roe, B., Meekums, M., Richards, M. (2018): What research evidence is there that dance movement therapy improves the health and wellbeing of older adults with dementia? A systematic review and descriptive narrative summary. *The Arts in Psychotherapy* 60, 32--40, <https://doi.org/10.1016/j.aip.2018.03.006>

In England, the National Institute for Health and Care Excellence (NICE) guidelines for supporting people with dementia recommend the therapeutic use of dancing and/or music as a treatment for non-cognitive symptoms, but make no direct reference to dance movement therapy or music therapy. Also, previous Cochrane Reviews in these areas have been criticized for being limited to randomized controlled trials focusing on outcomes. In order to maximize findings and explore the clinical process, this systematic review aimed to examine a broad range of research evidence (including quantitative, qualitative and arts based studies) for the benefits to health and wellbeing for adults aged 65 and older with dementia. Searches were conducted on multiple databases using predefined keywords. Two reviewers screened the texts retrieved using inclusion and exclusion criteria. The selection and process was determined by the PRISMA statement and the quality of included studies was appraised using a grading system. Results from the dance movement therapy literature are presented here in the form of a descriptive narrative summary. Findings show the existing evidence base consists of five mainly qualitative observational studies of varying methodological quality. Theoretically the included studies draw upon a person-centred approach, as well as elements of psychodynamic thinking. Therapeutic components across studies include spontaneity and improvisation, dramatic scenarios, rhythmic synchrony and symbolism. There is a focus on the importance of significant moments where the individual with dementia functions in a more integrated way, creating connections between thoughts, feelings and physical sensations.

Mabire, J.-B., Aquino, J.-P., & Charras, K. (2019). Dance interventions for people with dementia: Systematic review and practice recommendations. *International Psychogeriatrics*, *31*(7), 977–987.
<https://doi.org/10.1017/S1041610218001552>

Objectives: Dance interventions are pleasant social activities that are often offered to people with dementia in care settings. Effectiveness of dance as a psychosocial intervention for people with dementia has been studied to some extent, but several methodological issues remain unexplored. This review aimed to analyze studies on dance interventions for people with dementia and to identify practice recommendations for the development of these interventions. **Methods:** An electronic database search was run in December 2017 to identify records of dance interventions for people with dementia. We included all studies regardless of experimental design. Selected records were analyzed according to five criteria: study design and intentions of interventions; profile of participants and in/exclusion criteria; treatment indications and contraindications; description and performance of the interventions; and involved physical, cognitive, psychological, and social processes in dance. **Results:** Fourteen records were included in which various study designs were observed. Description and performance of the interventions were well documented. Nine practice recommendations for implementing dance interventions were identified according to primary intentions of the intervention (therapeutic or recreational): indications; contra-indications; participant profile; dosage; session sequencing; setting of intervention; observance/attendance; contributors and facilitators; and assessments. **Conclusions:** Dance is a holistic intervention that can be implemented with a therapeutic or a leisure intention. Practice recommendations about dance interventions remain incomplete and insufficiently studied. Such recommendations could be helpful for clinicians to implement dance interventions in facilities where they work to better target people who could benefit from them, and for researchers to develop research in this field.

Mala, A., Karkou, V., & Meekums, B. (2012). Dance/Movement Therapy (D/MT) for depression: A scoping review. *The Arts in Psychotherapy*, *39*(4), 287-295.

Abstract. Depression affects 121 million people worldwide (WHO, 2010). The socio-economic repercussions of depression are putting an enormous strain on UK and US governmental health budgets. Regarding treatment interventions, D/MT and other arts therapies are widely practiced around the world as a treatment of choice for depression. Research evidence suggests that exercise has positive effects on mood. Similarly, it has been argued that dance has a positive social-cultural influence on a person's wellbeing. However there are no systematic reviews that support the effectiveness of D/MT for people with a diagnosis of depression. It is therefore important to map the field of existing research studies of D/MT for depression. In this paper a scoping review is presented that engaged with an extensive search to best answer the question: is there good quality research evidence available regarding the effectiveness of D/MT and related fields for the treatment of depression? A search strategy was developed to locate publications from electronic databases, websites, arts therapies organizations and associations using specified criteria for including and excluding studies. All studies meeting the inclusion criteria were then evaluated for their quality, using broad criteria of quality such as type of methodology followed, number of participants, relevance of interventions and specific comparisons made and outcome measures. A total of nine studies were found. Six studies followed a randomized controlled trial design, and three adopted a non randomized design. At least one study met most criteria of quality. We concluded that there was a

need to undertake a full systematic review of the literature and to follow a Cochrane Review protocol and procedures.

Highlights. ► Scoping review of literature for dance movement psychotherapy and depression. ► The growth of depression as a global burden. ► Extensive search strategy across publications and databases. ► Nine studies found; six studies followed a randomized controlled trial design, and three adopted a non randomized design. ► We conclude the absence of full randomization and the need for a full systematic review of the literature through completing a Cochrane Review (title accepted).

Keywords: Dance/Movement Therapy, Dance movement psychotherapy, Depression, Effectiveness, Systematic review, Randomized controlled trials

Mansfield, L., Kay, T., Meads, C., Grigsby-Duffy, L., Lane, J., John, A., ... & Payne, A. (2018). Sport and dance interventions for healthy young people (15–24 years) to promote subjective well-being: a systematic review. *BMJ open*, 8(7), e020959.

Abstract. Objective To review and assess effectiveness of sport and dance participation on subjective well-being outcomes among healthy young people aged 15–24 years.

Design Systematic review.

Methods We searched for studies published in any language between January 2006 and September 2016 on PsychINFO, Ovid MEDLINE, Eric, Web of Science (Arts and Humanities Citation Index, Social Science and Science Citation Index), Scopus, PILOTS, CINAHL, SPORTDiscus and International Index to Performing Arts. Additionally, we searched for unpublished (grey) literature via an online call for evidence, expert contribution, searches of key organisation websites and the British Library EThOS database, and a keyword Google search. Published studies of sport or dance interventions for healthy young people aged 15–24 years where subjective well-being was measured were included. Studies were excluded if participants were paid professionals or elite athletes, or if the intervention was clinical sport/dance therapy. Two researchers extracted data and assessed strength and quality of evidence using criteria in the What Works Centre for Wellbeing methods guide and GRADE, and using standardised reporting forms. Due to clinical heterogeneity between studies, meta-analysis was not appropriate. Grey literature in the form of final evaluation reports on empirical data relating to sport or dance interventions were included.

Results Eleven out of 6587 articles were included (7 randomised controlled trials and 1 cohort study, and 3 unpublished grey evaluation reports). Published literature suggests meditative physical activity (yoga and Baduanjin Qigong) and group-based or peer-supported sport and dance has some potential to improve subjective well-being. Grey literature suggests sport and dance improve subjective well-being but identify negative feelings of competency and capability. The amount and quality of published evidence on sport and dance interventions to enhance subjective well-being is low.

Conclusions Meditative activities, group and peer-supported sport and dance may promote subjective well-being enhancement in youth. Evidence is limited. Better designed studies are needed.

Martin, L., Oepen, R., Bauer, K., Nottensteiner, A., Mergheim, K., Gruber, H., & Koch, S. (2018). Creative arts interventions for stress management and prevention—a systematic review. *Behavioral Sciences*, 8(2), 28.

Abstract. Stress is one of the world's largest health problems, leading to exhaustion, burnout, anxiety, a weak immune system, or even organ damage. In Germany, stress-induced work absenteeism costs about 20 billion Euros per year. Therefore, it is not surprising that the Central Federal Association of the public Health Insurance Funds in Germany ascribes particular importance to stress prevention and stress management as well as health enhancing measures. Building on current integrative and embodied stress theories, Creative Arts Therapies (CATs) or arts interventions are an innovative way to prevent stress and improve stress management. CATs encompass art, music, dance/movement, and drama therapy as their four major modalities. In order to obtain an overview of CATs and arts interventions' efficacy in the context of stress reduction and management, we conducted a systematic review with a search in the following data bases: Academic Search Complete, ERIC, Medline, Psyn dex, PsycINFO and SocINDEX. Studies were included employing the PICOS principle and rated according to their evidence level. We included 37 studies, 73% of which were randomized controlled trials. 81.1% of the included studies reported a significant reduction of stress in the participants due to interventions of one of the four arts modalities. View Full-Text

Keywords: creative arts therapies; arts interventions; art; music; dance; drama; stress management; prevention; systematic review

Meekums, B. (2010). Moving towards evidence for dance movement therapy: Robin Hood in dialogue with the King. *The Arts in Psychotherapy*, 37(1), 35-41.

Abstract. The myth of Robin Hood is used to explore the possible dynamics between arts therapies researchers, and in particular dance movement therapy researchers, and the world of science. As professions positioned in relation to science, arts therapists are in danger of splitting and denigration on the one hand, or appeasement on the other. The case is made for a new way forward that includes making use of what arts therapists do well in terms of creativity and embodied knowing, whilst reaching out into multidisciplinary and international research partnerships. The imperative to evidence arts therapies practice has never been more urgent. Three forms of evidence are explored: Randomised Controlled Trials and systematic reviews of these; process research; and practice-based evidence from more than one practitioner using a core data set of outcome measurement. A case study is offered to demonstrate how routine outcome measures can be used to gather evidence that links outcome to process.

Subjects: Dance Therapy; Evidence Based Practice; Movement Therapy

Keywords. Dance movement therapy; research; Science; Embodied knowing; Practice based evidence; Process

Meekums, B., Karkou, V., & Nelson, E. A. (2015). Dance movement therapy for depression. *Cochrane Database of Systematic Reviews*, Vol. 2). Cochrane AN: CD009895; PMID: 25695871.

Abstract. Background. Depression is a debilitating condition affecting more than 350 million people worldwide (WHO 2012) with a limited number of evidence-based treatments. Drug treatments may be inappropriate due to side effects and cost, and not everyone can use talking therapies. There is a need for evidence-based treatments that can be applied across cultures and with people who find it difficult to verbally articulate thoughts and feelings. Dance movement therapy (DMT) is used with people from a range of cultural and intellectual backgrounds, but effectiveness remains unclear.

Objectives. To examine the effects of DMT for depression with or without standard care, compared to no treatment or standard care alone, psychological therapies, drug treatment, or other physical interventions. Also, to compare the effectiveness of different DMT approaches.

Search methods. The Cochrane Depression, Anxiety and Neurosis Review Group's Specialised Register (CCDANCTR-Studies and CCDANCTR-References) and CINAHL were searched (to 2 Oct 2014) together with the World Health Organization's International Clinical Trials Registry Platform (WHO ICTRP) and ClinicalTrials.gov. The review authors also searched the Allied and Complementary Medicine Database (AMED), the Education Resources Information Center (ERIC) and Dissertation Abstracts (to August 2013), handsearched bibliographies, contacted professional associations, educational programmes and dance therapy experts worldwide.

Selection criteria. Inclusion criteria were: randomised controlled trials (RCTs) studying outcomes for people of any age with depression as defined by the trialist, with at least one group being DMT. DMT was defined as: participatory dance movement with clear psychotherapeutic intent, facilitated by an individual with a level of training that could be reasonably expected within the country in which the trial was conducted. For example, in the USA this would either be a trainee, or qualified and credentialed by the American Dance Therapy Association (ADTA). In the UK, the therapist would either be in training with, or accredited by, the Association for Dance Movement Psychotherapy (ADMP, UK). Similar professional bodies exist in Europe, but in some countries (e.g. China) where the profession is in development, a lower level of qualification would mirror the situation some decades previously in the USA or UK. Hence, the review authors accepted a relevant professional qualification (e.g. nursing or psychodynamic therapies) plus a clear description of the treatment that would indicate its adherence to published guidelines including Levy 1992, ADMP UK 2015, Meekums 2002, and Karkou 2006.

Data collection and analysis. Study methodological quality was evaluated and data were extracted independently by the first two review authors using a data extraction form, the third author acting as an arbitrator.

Main results. Three studies totalling 147 participants (107 adults and 40 adolescents) met the inclusion criteria. Seventy-four participants took part in DMT treatment, while 73 comprised the control groups. Two studies included male and female adults with depression. One of these studies included outpatient participants; the other study was conducted with inpatients at an urban hospital. The third study reported findings with female adolescents in a middle-school setting. All included studies collected continuous data using two different depression measures: the clinician-completed Hamilton Depression Rating Scale (HAM-D); and the Symptom Checklist-90-R (SCL-90-R) (self-rating scale). Statistical heterogeneity was identified between the three studies. There was no reliable effect of DMT on depression (SMD -0.67 95% CI -1.40 to 0.05; very low quality evidence). A planned subgroup analysis indicated a positive effect in adults, across two studies, 107 participants, but this failed to meet clinical significance (SMD -7.33 95% CI -9.92 to -4.73). One adult study reported drop-out rates, found to be non-significant with an odds ratio of 1.82 [95% CI 0.35 to 9.45]; low quality evidence. One study measured social functioning, demonstrating a large positive effect (MD -6.80 95% CI -11.44 to -2.16; very low quality evidence), but this result was imprecise. One study showed no effect in either direction for quality of life (0.30 95% CI -0.60 to 1.20; low quality evidence) or self esteem (1.70 95% CI -2.36 to 5.76; low quality evidence).

Authors' conclusions. The low-quality evidence from three small trials with 147 participants does not allow any firm conclusions to be drawn regarding the effectiveness of DMT for depression. Larger trials of high methodological quality are needed to assess DMT for depression, with economic analyses and acceptability measures and for all age groups.

Menezes DeJesus, B. M., Oliveira, R. C., de Carvalho, F. O., de Jesus Mari, J., Arida, R. M., & Teixeira-Machado, L. (2020): Dance promotes positive benefits for negative symptoms in autism spectrum disorder (ASD): A systematic review. *Complementary Therapies in Medicine* 49, 102299
Abstract. Background: Autism spectrum disorder (ASD) is characterized as a neurodevelopmental disorder with stereotyped and repetitive behaviors. Dance practice can elicit esthesia to stimulate the communication process through the notion of the phenomenal body that is recognized in an expressive and symbolic space. Objective: To conduct a systematic review to identify how dance promotes positive benefits for the negative symptoms in ASD. Method: We formulated the research question based on PICO: "What is the influence of dance on negative symptoms in individuals with autism spectrum disorder?". Databases were searched in March 2019 and included PubMed, Science Direct, Scopus, PsycInfo and Web of Science. Results: We identified 9,350 studies of which five were selected for our review (a total of 266 individuals). All included studies showed an influence of dance on negative symptoms, including empathy, emotional expression, body awareness, behavior, and psychological wellbeing that impact on social reciprocity, and consequently the communication process, in ASD. Conclusions: Dance practice may contribute to body awareness and social involvement using techniques that provide mirroring, synchronization, rhythm, and reciprocity in adults with normal to high-functioning ASD.

Meng, X., Li, G., Jia, Y., Liu, Y., Shang, B., Liu, P., Bao, X., & Chen, L. (2020). Effects of dance intervention on global cognition, executive function and memory of older adults: a meta-analysis and systematic review. *Aging clinical and experimental research*, 32(1), 7–19. <https://doi.org/10.1007/s40520-019-01159-w>

Objective: To summarize and assess the effects of dance intervention on global cognition, executive function and memory in older adults. **Methods:** We searched the databases PubMed, Web of Science, Cochrane Library, EMBASE, Clinical Trials.Gov and four Chinese databases (CNKI, CBM, Wan Fang Data and VIP) to identify articles written in English or Chinese and published until April 2018. Randomized controlled trials and quasi-experiment were included if they evaluated the impact of dance on cognition, and individuals aged 60 and over. **Results:** Thirteen studies with a total of 1605 participants met the inclusions criteria. Our primary outcomes of interest are cognitive functions and are categorized into three cognitive domains: (1)Global cognition: meta-analyses for outcome related to global cognition indicated a large effect size. In the subgroup of using MMSE, results indicated a significant effect for dance on cognition [MD = 1.57, 95% CI (0.53, 2.61), $p = 0.003$; $I^2 = 62\%$], in the subgroup of using SCEF, effect sizes was statically significant and no heterogeneity between studies [MD = 33.25, 95% CI (30.94, 35.56), $p < 0.00001$; $I^2 = 0\%$]. (2)Executive functioning domain: meta-analyses revealed that there were no significant differences between the two groups in measures of executive function after the one study with a low-quality score was excluded [SMD = 0.13, 95% CI (- 0.02, 0.27), $p = 0.09$; $I^2 = 0\%$].

(3)Memory domain: quantitative analysis showed that dance may benefit memory function in older adults. However, in our review, dance was more effective for elderly cognitions than exercise may be not support. **Conclusions:** Our meta-analysis and systematic review suggest that dance may be a safe and effective approach to improve cognitive function in older adults.

Millman, L., Terhune, D. B., Hunter, E., & Orgs, G. (2020). Towards a neurocognitive approach to dance movement therapy for mental health: A systematic review. *Clinical psychology & psychotherapy*, 10.1002/cpp.2490. Advance online publication. <https://doi.org/10.1002/cpp.2490>

Dance movement therapy (DMT) has become an increasingly recognized and used treatment, though primarily used to target psychological and physical well-being in individuals with physical, medical or neurological illnesses. To contribute to the relative lack of literature within the field of DMT for clinical mental health disorders, using a narrative synthesis, we review the scope of recent, controlled studies of DMT in samples with different psychiatric disorders including depression, schizophrenia, autism and somatoform disorder. A systematic search of electronic databases (PubMed, Science Direct, World of Science and Clinicaltrials.gov) was conducted to identify studies examining the effects of DMT in psychiatric populations. Fifteen studies were eligible for inclusion. After reviewing the principal results of the studies, we highlight strengths and weaknesses of this treatment approach and examine the potential efficacy of using bodily movements as a tool to reduce symptoms. We conclude by placing DMT within the context of contemporary cognitive neuroscience research, drawing out implications of such an orientation for future research and discussing potential mechanisms by which DMT might reduce psychiatric symptoms. DMT has clear potential as a treatment for a range of conditions and symptoms, and thus, further research on its utility is warranted.

Murillo-Garcia, A., Villafaina, S., Collado-Mateo, D., Leon-Llamas, J. L., & Gusi, N. (2020). Effect of dance therapies on motor-cognitive dual-task performance in middle-aged and older adults: a systematic review and meta-analysis. *Disability and rehabilitation*, 1–12. Advance online publication. <https://doi.org/10.1080/09638288.2020.1735537>

Purpose: To systematically review the effectiveness of dance-based programs to improve motor-cognitive dual-task performance in middle-aged and older adults. **Materials and methods:** Five scientific databases were selected to identify the articles included in this systematic review. Ninety-one articles were found in the electronic databases. Fourteen articles fulfilled all inclusion and exclusion criteria. The methodological quality of the studies was assessed with a modified version of Downs and Black checklist. PRISMA guidelines were followed in the data extraction process. The overall effect size of the improvements was calculated through a meta-analysis. **Results:** All the studies had an acceptable methodological quality. Dance-based interventions had a duration of 8-52 weeks, 1-3 sessions per week, with sessions lasting 40-90 min. According to the overall effect size, dance-based interventions significantly improved dual-task performance (-0.48 with a 95% confidence interval from -0.88 to -0.08). **Conclusions:** Dance-based intervention programs may be effective at improving the performance on motor-cognitive dual-task in middle-aged and older adults. Apart from the effects on the cognitive Time Up and Go test, dance interventions may also improve speed walking with a cognitive task. All these conclusions must be taken with caution due to the heterogeneity and the small number of articles.

Future research can be developed to increase the knowledge on these issues. Implications for rehabilitation Interventions based on dance as part of rehabilitation can improve the performance on TUG under dual-task condition in aging. Interventions based on dance can be effective to improve the development of some tasks of daily life by reducing time in a motor task under dual task condition in aging. Physical therapists, personal trainers and other clinicians can use different types of dance for improving dual-tasking among the adults.

Peng, Y., Su, Y., Wang, Y. D., Yuan, L. R., Wang, R., & Dai, J. S. (2020). Effects of regular dance therapy intervention on blood pressure in hypertension individuals: a systematic review and meta-analysis. *The Journal of sports medicine and physical fitness*, 10.23736/S0022-4707.20.11088-0. Advance online publication. <https://doi.org/10.23736/S0022-4707.20.11088-0>

Introduction: Dance therapy is a non-conventional aerobic exercise in cardiovascular rehabilitation. This meta-analysis aimed to update and assess evidence from randomized controlled trials of dance therapy on patients with hypertension. **Evidence acquisition:** PubMed, web of science, EBSCO, EMBESE, Cochrane Central Register of Controlled Trials and China National Knowledge Infrastructure databases in English or Chinese were searched and randomized controlled trials were conducted for this meta-analysis to investigate the effects of dance therapy on blood pressure in hypertension patients. Weighted mean difference (WMD) and 95% confidence intervals (CIs) were calculated. Heterogeneity was assessed by I² test. **Evidence synthesis:** Five studies were included according to the eligibility criteria. Dance therapy could significantly reduce the systolic, diastolic pressure of hypertension individuals (SBP : WMD - 11.07mmHg; 95% CI, -14.3 to -8.12mmHg, p<0.00001 ; DBP : WMD-4.16mmHg; 95% CI, -6.44to-1.88mmHg, p=0.0004) when compared with the control group. low heterogeneity was observed in this research (P =0.65; I²=0% to SBP; P =0.57; I² =0% to DBP). Subgroup analysis results showed that the subgroup of less than 12 weeks intervention group reduce the blood pressure more than those of 12 weeks intervention. Dance therapy reduce the SPB of hypertension individuals in African region better than Europe and America hypertension population. **Conclusions:** Despite the limited number of studies and people involved, the meta-analysis further demonstrated that dance therapy could reduce SBP and DBP in patients with hypertension. The effect of dance therapy intervention on hypertension might be related to duration of intervention and population gene.

Pessoa, R. F., Neves, C. M., & Ferreira, M. E. C. (2019). Dance therapy in aging: A systematic review. *Journal of Physical Education and Sport*, 19(2), 1180-1187.

Aging is a natural process that encompasses physical, cognitive, emotional, and social issues. Dancetherapy is a physical activity that can deeply influence all these aspects in elderly individuals. Previous studies have focused on the elderly population with diagnosed diseases such as: Alzheimer's, Parkinson's, dementia, depression, and cardiac disorders, among others. The scientific gap identified was the lack of eligible studies investigating dance therapy practice in healthy elderly people. A systematic review of the literature was conducted to identify and analyze studies that evaluated the physical, cognitive, psychoemotional, and social benefits of dance therapy in healthy elderly people. To do this, a search was performed on the PubMed, Scopus and VHL databases, on July 10, 2018 using the descriptors "dance therapy," "aged," "aging," and "elderly." There were 2,334 studies, out of which 6 were chosen.

Considering the multidimensionality and complexity of the phenomenon of aging, the results of this review allow the conclusion that dance therapy is a highly relevant intervention that demonstrates benefits in physical, psychoemotional, and social aspects. These benefits improved functional autonomy and existential renovation. It is suggested that future studies investigate the effectiveness of dance therapy as a potential tool for an active and healthy aging process.

Rabadán, J., Chamarro, A., & Álvarez, M. (2017). Terapias artísticas y creativas en la mejora del malestar psicológico en mujeres con cáncer de mama. [Artistic and creative therapies in improving psychological distress in women with breast cancer. Systematic review]. Revisión sistemática. *Revista de Psicooncología. Investigación y Clínica Biopsicosocial en Oncología*, 14(2-3), 0187-202.

Resumen: Objetivo: Conocer el estado actual de la eficacia de las terapias artísticas y creativas (TAC) en las variables de malestar psicológico de mujeres con cáncer de mama y delimitarla en función del tipo de TAC y momento terapéutico del paciente. Método: La búsqueda se realizó mediante las bases de datos Pubmed, Web of Science, Psychinfo y Google Academic para el periodo 2010-2016. Resultados: Se obtienen 9 estudios RTC y cuasi-experimentales controlados (2 de Danza movimiento terapia, 1 de Arte Terapia, 1 de Musicoterapia y 5 de Escucha musical) que incluyen 680 participantes. Se discute la calidad metodológica, el riesgo de sesgo y las medidas de eficacia terapéutica. Conclusiones: Las TAC parecen ser una ayuda complementaria a corto plazo durante la fase de tratamiento en cáncer de mama. Sin embargo, son necesarios más ensayos para aclarar los mecanismos subyacentes a la mejora, así como delimitar la eficacia de cada modalidad.

Palabras clave: Cáncer de mama, terapia artística, terapia creativa, musicoterapia, terapia con música, danza movimiento terapia, arte terapia.

Abstract: Objective: To know the current state of the effectiveness of artistic and creative therapies (ACTs) over psychological distress of women with breast cancer and to delimit it according to the type of CT and the therapeutic moment of the patient. Method: The search was performed using Pubmed, Web of Science, Psychinfo and Google Academic databases for the period 2010-2016. Results: nine controlled RTC and quasi-experimental studies (2 of Dance movement therapy, 1 of Art Therapy, 1 of Music therapy and 5 of Musical Listening) were obtained, including 680 participants. Methodological quality, risk of bias and measures of therapeutic efficacy are discussed. Conclusions: ACT scans seem to be short-term complementary aid during the treatment phase in breast cancer. However, more trials are needed to clarify the mechanisms underlying the improvement as well as to delimit the effectiveness of each modality.

Keywords: Breast cancer, creative therapy, artistic therapy, music therapy, dance movement therapy, art therapy.

Ren, J., & Xia, J. (2013). Dance therapy for schizophrenia. *Cochrane Database of Systematic Reviews*, (10). Cochrane AN: CD006868; PMID: 24092546

Abstract. Background. Dance therapy or dance movement therapy (DMT) is defined as 'the psychotherapeutic use of movement as a process which furthers the emotional, social, cognitive, and physical integration of the individual'. It may be of value for people with developmental, medical, social, physical or psychological impairments. Dance therapy can be practiced in mental health rehabilitation

units, nursing homes, day care centres and incorporated into disease prevention and health promotion programmes.

Objectives. To evaluate the effects of dance therapy for people with schizophrenia or schizophrenia-like illnesses compared with standard care and other interventions.

Search methods. We updated the original July 2007 search of the Cochrane Schizophrenia Group' register in July 2012. We also searched Chinese main medical databases.

Selection criteria. We included one randomised controlled trial (RCT) comparing dance therapy and related approaches with standard care or other psychosocial interventions for people with schizophrenia.

Data collection and analysis. We reliably selected, quality assessed and extracted data. For continuous outcomes, we calculated a mean difference (MD); for binary outcomes we calculated a fixed-effect risk ratio (RR) and their 95% confidence intervals (CI). We created a 'Summary of findings' table using the GRADE approach.

Main results. We included one single blind study (total n = 45) of reasonable quality. It compared dance therapy plus routine care with routine care alone. Most people tolerated the treatment package but nearly 40% were lost in both groups by four months (1 RCT n = 45, RR 0.68 95% CI 0.31 to 1.51, low quality evidence). The Positive and Negative Syndrome Scale (PANSS) average endpoint total scores were similar in both groups (1 RCT n = 43, MD -0.50 95% CI -11.80 to 10.80, moderate quality evidence) as were the positive sub-scores (1 RCT n = 43, MD 2.50 CI -0.67 to 5.67, moderate quality evidence). At the end of treatment, significantly more people in the dance therapy group had a greater than 20% reduction in PANSS negative symptom score (1 RCT n = 45, RR 0.62 CI 0.39 to 0.97, moderate quality evidence), and overall, average negative endpoint scores were lower (1 RCT n = 43, MD -4.40 CI -8.15 to -0.65, moderate quality evidence). There was no difference in satisfaction score (average Client's Assessment of Treatment Scale (CAT) score, 1 RCT n = 42, MD 0.40 CI -0.78 to 1.58, moderate quality evidence) and quality of life data were also equivocal (average Manchester Short Assessment of Quality of life (MANSA) score, 1 RCT n = 39, MD 0.00 CI -0.48 to 0.48, moderate quality evidence).

Authors' conclusions. Based on predominantly moderate quality data, there is no evidence to support - or refute - the use of dance therapy in this group of people. This therapy remains unproven and those with schizophrenia, their carers, trialists and funders of research may wish to encourage future work to increase high quality evidence in this area.

Ritter, M., & Low, K. G. (1996). Effects of dance/movement therapy: A meta-analysis. *The Arts in Psychotherapy, 23*(3), 249-260.

The expansion of the field of dance/movement therapy (DMT) since the founding of the American Dance Therapy Association (ADTA) by Marian Chace has led to an increasing interest in DMT re- search (Rossberg-Gempton & Poole, 1992). The ADTA has defined DMT as the, "use of movement as a process which furthers physical and emotional integration of an individual" (Sandel, 1975, p. 439). Research on the effects of DMT, however, has primarily consisted of qualitative and exploratory clinical reports. The present study addresses methodological problems that have affected the DMT literature and evaluates quantitative studies of DMT using meta-analytic techniques. Meta-analysis is a statistical technique used to summarize a collection of related studies. Such analyses have often been used to assess the effectiveness of psychotherapy for specific disorders by averaging effects across similar studies (e.g., Smith

& Glass, 1977). Effect sizes assessing the magnitude of a relationship or change are calculated for each inter-vention study. These effect sizes are then standardized and averaged across studies to produce a summary statistic that reflects the average change associated with the intervention. The purpose of the present study was to calculate standardized effect sizes for case-control studies of dance/movement therapy and to produce summary statistics reflecting the average change associated with DMT compared to controls. The study also examined the effectiveness of DMT in different samples (e.g., children, psychiatric patients, elderly) and for varying diagnoses (anxiety disorders, schizophrenia, developmental disabilities) using meta-analysis.

Rubel Zlotnik, G. (2020). Bridging the Gap: Relationship Building Through the Use of Dance Movement Therapy With Older Adults With Dementia: Literature Review.

The purpose of this capstone thesis is to examine how the use of dance movement therapy (DMT) can be a beneficial intervention for relationship building when working with older adults with dementia. Studies have shown that dementia is a state where body and mind are in distress (Hill, 2009; Karkou & Meekums, 2017). Therefore, caring and understanding of dementia treatment is vital for maintaining relationships and developing new ones. Person-centered care (PCC) has been used in this thesis as a theoretical psychological framework to support relationship building with elders with dementia. Karkou and Meekums (2017) suggested that due to the condition of dementia, people are experiencing a decline in verbal memory and abstract thinking, therefore is a need to offer an effective therapeutic intervention which is non-verbal and body-oriented, such as DMT. Accordingly, the therapeutic movement relationship (TMR) and Marian Chace's DMT-based framework was used to address, support, and connect between the benefits DMT, PCC and TMR have to the person with dementia. By presenting different interventions of DMT, this thesis is hoping to address how and why those tools are essential for working with older adults with dementia. In addition, the importance of involving care staff and family members in the process of relationship-building was addressed.

Schmitt, B., & Frölich, L. (2007). Kreative Therapieansätze in der Behandlung von Demenzen-eine systematische Übersicht [Creative therapy options for patients with dementia--a systematic review] (in German). *Fortschritte der Neurologie· Psychiatrie*, 75(12), 699-707.

Zusammenfassung: Das Spezifische kreativer Therapien liegt in der Aktivierung schöpferischer Potenziale des Patienten im Sinne der Krankheitsbewältigung, Neuorientierung und Förderung der Lebensqualität. Kreative Therapieansätze zur Behandlung der Demenzpatienten bieten den Vorteil, dass sie auf einer nonverbalen Ebene mit dem Patienten arbeiten können, dessen Kognition und häufig sprachliche Mitteilung beeinträchtigt ist. Der vorliegende Artikel gibt eine systematische Übersicht über Studien, die von der Anwendung der kreativen Therapien „Musik-, Kunst-, Drama- und Tanztherapie“ in folgenden Datenbanken zu finden waren (Mai 2005): Medline, Psyndex Plus, PsychInfo und Cochrane. Als Suchbegriffe wurden eingegeben: „Creativ* and therapy and dementia and (stud*)“, „Dance therapy and dementia“, „Music therapy and dementia“, „Drama therapy and dementia“ und „Art therapy and dementia“. Insgesamt wurden nach diesen Suchkriterien beginnend ab 1998 sieben quantitativ ausgewertete kontrollierte Studien, 3 prä-post-Vergleiche und drei qualitative Analysen beschrieben, die in Gruppen von mindestens 3 Teilnehmern durchgeführt wurden. Überblicksartikel werden im Text

erwähnt. Die Übersicht der vorhandenen Studien zu kreativen Therapien bei Demenzen zeigt, dass die vorhandenen Daten den Einsatz kreativer Therapien zur Förderung der Interaktionsfähigkeit und der Lebendigkeit im Ausdruck unterstützen. Das Spannungsfeld zwischen Methodik der Erfassung der Therapieeffekte und der Therapieinhalte, die ihre Spezifität in der therapeutischen Anleitung zu aktiven und kreativen Prozessen der Patienten haben, führt zur Forderung nach Weiterentwicklung und Validierung von Instrumenten, mit denen Parameter wie z. B. Lebendigkeit und Interaktionsfähigkeit quantitativ abgebildet werden können.

Schlüsselwörter: Demenzen - Kreative Therapien – Studienübersicht

Abstract: The specifics of creative therapies aim at activating the creative potential of the patients in the sense of acceptance, orientation and coping with their illness “dementia” and at improving their quality of life. Creative therapies in the treatment of dementia offer the advantage of working with these patients, whose cognition and often also verbal communication skills are affected in a nonverbal way. This article presents a systematic review of studies and case studies, which could be found on the subject of the implementation of active creative therapies “music-, art-, drama- and dance-therapy” within the following databases (05/05): Medline, Psycindex Plus, PsychInfo and Cochrane. The search terms used were: “Creativ* and therapy and dementia and (stud*)”, “Dance therapy and dementia”, “Music therapy and dementia”, “Drama therapy and dementia” and “Art therapy and dementia”. As a result of this search we found seven quantitative evaluated controlled studies, three prae-post comparisons and three qualitative evaluated studies which have been finished since 1998. All of these studies included groups of at least three participants. Further reviews are mentioned in this article. This survey of studies on creative therapies for patients with dementia shows positive effects like the improvement of interaction skills. The data supplied thus supports the approach of using creative therapies in order to help patients accept dementia as their illness and finally to cope with it. The methodical approach to the registration of the therapies’ effects and process-orientated contents of the therapy create a field of tension, leading to the request for a further development and validation of instruments, which allow the quantitative evaluation of parameters like liveliness, agility and interaction skills. Subjects: Dementia therapy; Psychotherapy; Aged: 65+ years; Middle Aged: 45-64 years; All Adult: 19+ years

Key words: dementia - creative therapies - review

Strassel, J. K., Cherkin, D. C., Steuten, L., Sherman, K. J., & Vrijhoef, H. J. (2011). A systematic review of the evidence for the effectiveness of dance therapy. *Alternative Therapies in Health & Medicine, 17*(3).

Abstract. Background • Dance therapy uses psychotherapeutic movement to support the cognitive, emotional, physical, and social integration of a person. Dance therapy may be of value for people with developmental, medical, social, physical, or psychological impairments. Objectives • To evaluate the hypothesis that dance therapy has therapeutic benefits by systematically analyzing and summarizing the evidence. Methods • Thirteen databases were searched for systematic reviews and randomized controlled trials (RCTs) on the effectiveness of dance therapy. The Overall Quality Assessment Questionnaire (OQAQ) was used to assess review quality, and RCT quality was assessed using the Jadad Scale. Results: Eight reviews and 18 RCTs about the effectiveness of dance therapy met our inclusion criteria. According to the OQAQ seven of the eight reviews were of poor methodological quality. The quality of the RCTs ranged from poor to good. In most cases, the reviews and trials reported positive benefits related to

improvements in quality of life, self-esteem, or coping with a disease. Conclusion • Most studies have found therapeutic benefits of dance therapy, although these results are based on generally poor-quality evidence. Dance therapy should be considered as a potentially relevant add-on therapy for a variety of conditions that do not respond well to conventional medical treatments. Well-performed RCTs and observational studies are highly recommended to determine the real value of dance therapy. [ABSTRACT FROM AUTHOR]

Subjects: Dance Therapy methods; Evidence-Based Medicine; Quality of Life; Self Concept; Stress, Psychological prevention & control

Keywords: *DANCE therapy; *PSYCHOTHERAPY; *QUALITY of life; *SELF-esteem; *THERAPEUTICS

Takahashi, H., Matsushima, K., & Kato, T. The Effectiveness of Dance/Movement Therapy Interventions for Autism Spectrum Disorder: A Systematic Review. *American Journal of Dance Therapy*, 1-20.

Abstract. The use of dance/movement therapy (DMT) as a treatment modality for children and adults with autism spectrum disorder (ASD) has been studied extensively since the 1970s. This systematic review of studies published between 1970 and 2018 aims to (a) verify the quality of DMT and ASD studies using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, and (b) evaluate the effectiveness of DMT interventions for individuals with ASD. Keyword analyses of four electronic databases—Medline, Pubmed, Cinahl, and Springer Link—were used to select the studies examined in this research study, with seven selected according to specific conditions. Two studies after 2016 were identified as having the highest level of evidence at level 2b on the scale of The Oxford Centre for Evidence-Based Medicine: Levels of Evidence. Two studies conducted before 1985 were lower than level 4. Five studies after 2015 were found to have either fair or low risk of bias according to the Assessment of Controlled Intervention Studies developed by National Institutes of Health. Two pre-1985 studies were evaluated as having a high risk of bias. While this study found that the quality of DMT and ASD studies has improved in recent years, future research must demonstrate greater scientific rigor in documenting the efficacy of DMT treatment interventions. It also found that imitation (mirroring) interventions helped individuals with ASD improve their social skills.

van de Kamp, M. M., Scheffers, M., Hatzmann, J., Emck, C., Cuijpers, P., Beek, P. J. (2019): Body-and movement-oriented interventions for posttraumatic stress disorder: A systematic review and meta-analysis. *Journal of Traumatic Stress*, <https://doi.org/10.1002/jts.22465>. To assess the efficacy of body-and movement-oriented interventions (BMOIs) in traumatized adults with posttraumatic stress disorder (PTSD), we conducted a systematic review and meta-analysis of pertinent literature. Four bibliographical databases (PsycINFO, Ovid MEDLINE(R), EMBASE, and the Cochrane Central Register of Controlled Trials) were searched using keywords and text words for trials on BMOIs addressing PTSD. The search included articles published between October 2005 and August 2017. Studies were included if participants were adults suffering from PTSD, if BMOIs were the therapeutic strategy under investigation, and if a psychometrically evaluated standardized outcome measure for PTSD was used. No limitations for control conditions were applied. Hedges' *g* was computed as the effect size (ES) for the treatment versus control condition. The meta-analysis included 15 studies, which resulted in a mean ES of $g = 0.85$, 95% CI [0.31,

1.39], with very high heterogeneity, $I^2 = 91\%$. After removing one study as outlier, a mean effect size of $g = 0.56$, 95% CI [0.29, 0.82] (i.e., medium effect), still with considerable heterogeneity, $I^2 = 57\%$, was found. BMOIs seem to be effective in reducing symptoms of PTSD, but more research is needed to identify working mechanisms and to determine which types of intervention are most effective for various subgroups of patients.

Van Westrhenen, N., & Fritz, E. (2014). Creative arts therapy as treatment for child trauma: An overview. *The Arts in Psychotherapy*, 41(5), 527-534.

Abstract. To address child trauma caused by events that affect children directly, such as abuse, or indirectly, such as divorce, creative arts therapies are used by creative arts therapists as well as psychologists and counselors. The purpose of this paper is to review such interventions and the research conducted throughout the last 12 years. We considered the methodology used, the population under study and theoretical frameworks, with specific attention given to the reliability, validity and trustworthiness of such research findings. The results showed that the majority of articles reported their findings narratively, with much emphasis placed on the process followed. It was recommended that therapists work closely with researchers to make creative arts therapies less of an outlier in the therapeutic approaches for traumatized children.

Veronese, N., Maggi, S., Schofield, P., & Stubbs, B. (2017). Dance movement therapy and falls prevention. *Maturitas*, 102, 1-5.

Highlights. • Dance is a popular form of physical activity with multiple health benefits. • We conducted a systematic review of randomized controlled trials considering the benefits of dance on falls and fear of falling in older adults. • There was inconsistent or no evidence to support the benefits of dance on falls. • There was some indication that dance may reduce fear of falling. • The paucity of randomized controlled trials, heterogeneity of samples, interventions and lack of long-term follow-up preclude any firm conclusions.

Abstract. Falls are a leading cause of morbidity, healthcare use and mortality. Dance is a popular form of physical activity among older people and previous research has suggested that it may improve various health outcomes in this population, including balance, gait and muscle performance. A systematic review of the potential benefits of dance on falls and fear of falling is lacking. Thus, we conducted a systematic review considering all randomized controls trials (RCTs) investigating if dance can reduce falls and improve fear of falling in older adults. Major databases were searched from inception until 1 March 2017 and a total of 10 RCTs were identified, which included a total of 680 people ($n = 356$ dance, $n = 324$ control). Overall, the mean age of the samples was 69.4 years, and 75.2% were female. Across four RCTs, dance therapy reduced falls versus usual care in only one study. Dance therapy improved fear of falling in two out of three included RCTs. There were no serious adverse events reported in the RCTs. In summary, we found a paucity of studies investigating the effect of dance on falls and fear of falling and the evidence base is preliminary and equivocal. Given the heterogeneity of the included samples and interventions, in addition to the short-term follow-up, no firm conclusions can be drawn. However, dance appears to be safe and, given its popularity and demonstrated benefits on other health/wellbeing outcomes

in older adults, it is important that future research considers its potential benefits on falls/fear of falling in older.

Keywords. Dancing; Falls; Older people; Fear of falling; Systematic review

Xia, J., & Grant, T. J. (2009). Dance therapy for schizophrenia. *Cochrane Database of Systematic Reviews*, (1).

Abstract. Background. Dance therapy or dance movement therapy (DMT) is defined as 'the psychotherapeutic use of movement as a process which furthers the emotional, social, cognitive, and physical integration of the individual'. It may be of value for people with developmental, medical, social, physical or psychological impairments. Dance therapy can be practiced in mental health rehabilitation units, nursing homes, day care centres and incorporated into disease prevention and health promotion programs.

Objectives. To evaluate the effects of dance therapy for people with schizophrenia or schizophrenia-like illnesses compared with standard care and other interventions.

Search methods. We searched the Cochrane Schizophrenia Group Trials Register (July 2007), inspected references of all identified studies (included and excluded), and contacted first authors for additional data. We updated this search on 10th July 2012 and added the results to the awaiting classification section of the review

Selection criteria. We included all randomised controlled trials (RCTs) comparing dance therapy and related approaches with standard care or other psychosocial interventions for people with schizophrenia.

Data collection and analysis. We reliably selected, quality assessed and extracted data. We excluded data where more than 30% of participants were lost to follow-up. For continuous outcomes we calculated a weighted mean difference; for binary outcomes we calculated a fixed-effect risk ratio (RR) and their 95% confidence intervals (CI).

Main results. We included one single blind study (total n=45) of reasonable quality. It compared dance therapy plus routine care with routine care alone. Most people tolerated the treatment package but about 40% were lost in each group by four months (RR 0.68 CI 0.31 to 1.51). PANSS average endpoint total scores were similar in each group (WMD -0.50 CI -11.8 to 10.8) as were the positive subscores (WMD 2.50 CI -0.67 to 5.67). At the end of treatment significantly more people in the dance therapy group had a greater than 20% reduction in PANSS negative symptom score (RR 0.62 CI 0.39 to 0.97), and overall average negative endpoint scores were lower (WMD -4.40 CI -8.15 to 0.65). There was no difference in satisfaction score (average CAT score, WMD 0.40 CI -0.78 to 1.58) and quality of life data were also equivocal (average MANSA score, WMD 0.00 CI -0.48 to 0.48).

Authors' conclusions. There is no evidence to support - or refute - the use of dance therapy in this group of people. This therapy remains unproven and those with schizophrenia, their carers, trialists and funders of research may wish to encourage future work to increase high quality evidence in this area.

[Note: the citation in the awaiting classification section of the review may alter the conclusions of the review once assessed.]

Yu, M., & Bega, D. (2019). A Review of the Clinical Evidence for Complementary and Alternative Medicine in Huntington's Disease. *Tremor and other hyperkinetic movements (New York, N.Y.)*, 9, 10.7916/tohm.v0.678. <https://doi.org/10.7916/tohm.v0.678>

Background: There is a lack of published guidelines related to the use of complementary and alternative medicine (CAM) for Huntington's disease (HD). We conducted a review of the literature to summarize the available evidence for various mind-body practices and nutraceuticals. **Methods:** PubMed and Cochrane Library electronic databases were searched independently from inception to February 2019 by two independent raters. Studies were classified for the level of evidence (Class I, II, III, or IV) according to the American Academy of Neurology (AAN) classification scale. **Results:** Randomized controlled trials in HD were reviewed for mind-body interventions (dance therapy, music therapy, and exercise), alternative systems (traditional Chinese medicine [TCM]), and nutraceuticals/diet (aminooxyacetic acid [AOAA], coenzyme q10, creatine, cannabinoids, alpha-tocopherol, eicosapentaenoic acid, idebenone, levocarnitine, and triheptanoin). Few studies met AAN Class I or II level of evidence for benefits, and these are highlighted. **Discussion:** There is a relative paucity of clinical trials examining CAM modalities in HD when compared to other neurodegenerative disorders. Currently, there is no evidence supporting disease modification or symptom improvement with any specific dietary or nutraceutical supplement for HD. Supervised exercise and contemporary dance are safe for people with HD, but more robust studies are warranted to guide specific recommendations for these and other mind-body interventions.

Yun, H., Sun, L., & Mao, J. J. (2017). Growth of integrative medicine at leading cancer centers between 2009 and 2016: A systematic analysis of NCI-designated comprehensive cancer center websites. *JNCI Monographs*, 2017(52).

Abstract. Background: Cancer centers have increasingly offered integrative medicine therapies in response to their patients' unmet needs. We evaluated the growth of integrative medicine in leading academic cancer centers in the United States as reflected by their public-facing websites.

Methods. We performed a systematic review of 45 National Cancer Institute (NCI)-designated comprehensive cancer center websites. Two researchers independently evaluated whether the websites provided information regarding integrative medicine modalities and, if so, whether the services were provided in the same health system. They compared the proportion of cancer centers providing the information on each modality in 2016 with the data from the prior study in 2009.

Results. The most common integrative medicine therapies mentioned on the 45 NCI-designated comprehensive cancer center websites were exercise (97.8%) and acupuncture and meditation (88.9% each), followed by yoga (86.7%), massage (84.4%), and music therapy (82.2%). The majority of the websites also provided information on nutrition (95.6%), dietary supplements (93.3%), and herbs (88.9%). The most common therapies offered in the health systems were acupuncture/massage (73.3% each), meditation/yoga (68.9% each), and consultations about nutrition (91.1%), dietary supplements (84.4%), and herbs (66.7%). Compared with 2009, there was a statistically significant increase in the number of websites mentioning acupuncture, dance therapy, healing touch, hypnosis, massage, meditation, Qigong, and yoga (all $P < .05$).

Conclusions. Leading US cancer centers increasingly present integrative medicine content on their websites, and the majority of them provide these services to patients in the same health systems.

Topic: consultation acupuncture therapy discipline exercise cancer care facilities dietary supplements internet massage therapy meditation music therapy yoga science of nutrition national cancer institute health care systems integrative medicine acupuncture procedure

Subjects: Integrative Medicine organization & administration; Medical Oncology organization & administration

Zhang, Q., Hu, J., Wei, L., Jia, Y., & Jin, Y. (2019). Effects of dance therapy on cognitive and mood symptoms in people with Parkinson's disease: A systematic review and meta-analysis. *Complementary therapies in clinical practice*, 36, 12–17. <https://doi.org/10.1016/j.ctcp.2019.04.005>

Objective: To investigate whether the dance therapy was more beneficial than non-dance therapy on cognitive and mood symptoms in patients with Parkinson's disease (PD). **Methods:** MEDLINE, CINAHL, Embase and the Cochrane Central Register of Controlled Trials were searched from inception to December 11, 2018. Risk of bias for the included trials was assessed using criteria in the Cochrane Handbook for Systematic Reviews of Interventions. **Results:** Seven randomized controlled trials were identified on cognitive and mood symptoms in patients with PD. There were significant differences in favor of dance in executive function (WMD = 1.17, 95% CI:0.39 to 1.95, P = 0.003; I² = 0%, P = 0.45), but not in outcomes of global cognitive function, depression and apathy. **Conclusions:** Dance therapy is beneficial in improving executive function for adults with PD. However, there are no positive effects were founded on global cognitive function, depression and apathy for PD.

2. S1 AND S3: RCT AND DMT

Plus Hand search and controlled studies

Aithal, S., Karkou, V., Kuppusamy, G., & Mariswamy, P. (2019). Backing the backbones—A feasibility study on the effectiveness of dance movement psychotherapy on parenting stress in caregivers of children with Autism Spectrum Disorder. *The Arts in Psychotherapy*, 64, 69-76. doi:10.1016/j.aip.2019.04.003

Abstract. Dance Movement Psychotherapy (DMP) utilises the therapeutic power of dance within a psychotherapeutic frame to both alleviate distress as well as promote overall wellbeing. The effectiveness of an integrative approach to DMP was explored on the parenting stress experienced by the caregivers of children on the autism spectrum. The present study was conducted in India. Twelve caregivers of children on the autism spectrum from different regions of India were recruited from a special education setting. They were divided into experimental (intervention) and control groups (waiting list) and were evaluated before and after six DMP group sessions. Parenting Stress Index-Short Form (PSI-SF) and Hamilton Depression Rating Scale (HAM-D) were the tools used for assessment. The comparisons of pre and post intervention assessments indicate reduction in parenting stress scores after DMP intervention. The results suggest that integrative approach to DMP may be an effective option to support the caregivers of children on the autism spectrum to maintain their state of wellbeing. Difficulty in recruiting the participants and to assign them randomly were the limitations of this study. However, the findings of the study merit further explorations with larger samples and in-depth study of the therapeutic process.

Allet, L., Müller-Pinget, S., Punt, I., Edelsten, C., Ballif, A., Golay, A., & Pataky, Z. (2017). Dance therapy combined with patient education improves quality of life of persons with obesity: A pilot feasibility study for a randomised controlled trial. *Obesity research & clinical practice*, 11(1), 79-87.

Highlights. • Dance therapy combined with patient education improve quality of life of obese people. • Mainly females adhere to dance therapy. • Dance therapy is appreciated by patient • Dance therapy shows no added value compared to an educational program alone.

Summary. Objective. To assess the effect of dance therapy combined with patient education on quality of life, functional capacity (lower limb power and endurance) and physical activity level in obese individuals.

Methods. Thirty-three obese patients were randomised to a control group (structured patient education ambulatory program), and 34 to an intervention group (structured patient education ambulatory program combined with weekly sessions of dance therapy). Patients' quality of life, physical function and physical activity level were assessed at baseline and after 16 weeks.

Results. Almost only women were willing to enrol in the study. Participants of the intervention group significantly improved their quality of life ($p = 0.023$), and particularly self-esteem ($p = 0.014$). However, dance therapy added to a patient educational program did not produce statistically significant higher effects than a patient education program alone on functional capacities and patients' physical activity level.

Conclusion. A 16 week structured patient educational program combined with dance therapy seems to have a positive effect on the quality of life of obese people, but no effect on functional capacities and physical activity.

Practice implication. Dance therapy combined with structured patient education is an interesting approach to improve quality of life of obese people.

Keywords. Obesity; Dance therapy; Functional capacities; Quality of life; Physical activity

Bräuninger, I. (2012). The efficacy of dance movement therapy group on improvement of quality of life: A randomized controlled trial. *The Arts in Psychotherapy*, 39(4), 296-303.

Abstract. This study examines the treatment outcome of a ten weeks dance movement therapy intervention on quality of life (QOL). The multicentred study used a subject-design with pre-test, post-test, and six months follow-up test. 162 participants who suffered from stress were randomly assigned to the dance movement therapy treatment group (TG) (n = 97) and the wait-listed control group (WG) (65). The World Health Organization Quality of Life Questionnaire 100 (WHOQOL-100) and Munich Life Dimension List were used in both groups at all three measurement points. Repeated measures ANOVA revealed that dance movement therapy participants in all QOL dimensions always more than the WG. In the short term, they significantly improved in the Psychological domain ($p > .001$, WHOQOL; $p > .01$, Munich Life Dimension List), Social relations/life ($p > .10$, WHOQOL; $p > .10$, Munich Life Dimension List), Global value ($p > .05$, WHOQOL), Physical health ($p > .05$, Munich Life Dimension List), and General life ($p > .10$, Munich Life Dimension List). In the long term, dance movement therapy significantly enhanced the psychological domain ($p > .05$, WHOQOL; $p > .05$, Munich Life Dimension List), Spirituality ($p > .10$, WHOQOL), and General life ($p > .05$, Munich Life Dimension List). Dance movement therapy is effective in the short- and long-term to improve QOL.

Highlights. ► Efficacy of a 10 week dance movement therapy (DMT) group intervention on quality of life was tested. ► This randomized controlled trial examined changes in the short- and long-term (N = 162) on people suffering from stress. ► DMT significantly improved QOL, especially psychological well-being and general life in the short and long term. ► Social relations, Global value, and Physical health improved significantly in the short term. ► Spirituality and general life improved in the long term as an effect of dance therapy.

Keywords. Dance therapy; Dance movement therapy; Research; Quality of life (QOL); Randomized controlled trial; Treatment outcome and efficacy

Bräuninger, I. (2012). Dance movement therapy group intervention in stress treatment: A randomized controlled trial (RCT). *The Arts in Psychotherapy*, 39(5), 443-450.

Abstract. This randomized controlled trial compares the effect of a dance movement therapy (DMT) group intervention on stress management improvement and stress reduction with a wait-listed control group (WG). 162 self-selected clients suffering from stress were randomly assigned to a WG or a DMT intervention that received 10 group therapy sessions. Stress management [Stressverarbeitungsfragebogen/SVF 120], psychopathology and overall distress (Brief Symptom Inventory/BSI) were evaluated at baseline (t1: pre-test), immediately after completion of the ten sessions DMT group intervention (t2: post-test), and 6 months after the DMT treatment (t3: follow-up test). Analysis of variance was calculated to evaluate the between-group (time \times condition) and within-group (time) effect of the DMT intervention. Negative stress management strategies decreased significantly in the short-term at t2 ($p < .005$) and long-term at t3 ($p < .05$), Positive Strategy Distraction improved

significantly in the short-term ($p < .10$), as well as Relaxation ($p < .10$). Significant short-term improvements were observed in the BSI psychological distress scales Obsessive-Compulsive ($p < .05$), Interpersonal Sensitivity ($p < .10$), Depression ($p < .05$), Anxiety ($p < .005$), Phobic Anxiety ($p < .01$), Psychoticism ($p < .05$), and in Positive Symptom Distress ($p < .02$). Significant long-term improvement in psychological distress through DMT existed in Interpersonal Sensitivity ($p < .05$), Depression ($p < .000$), Phobic Anxiety ($p < .05$), Paranoid Thinking ($p < .005$), Psychoticism ($p < .05$), and Global Severity Index ($p < .01$). Results indicate that DMT group treatment is more effective to improve stress management and reduce psychological distress than non-treatment. DMT effects last over time.

Highlights. ► Dance movement therapy's effect on stress management improvement and stress reduction was examined. ► This RCT compared short- and long-term effect of 10 sessions' DMT group intervention ($N = 162$). ► Negative strategies decreased and distraction improved significantly through DMT. ► Psychological distress and psychopathology decreased significantly at t2 (after treatment) and t3 (6-months' follow-up) in DMT group. ► DMT effects on stress management improvement and stress reduction last over time and DMT is more effective than non-treatment.

Keywords. Dance movement therapy (DMT); research; Stress management; stress reduction; Randomized controlled trial (RCT); Treatment effectiveness; Group therapy

Bryl, K. (2018): F239. The role of dance/movement therapy in treatment of negative syndrome and psychosocial functioning of patients with schizophrenia: results from a pilot mixed methods intervention study with explanatory intent. *Schizophrenia Bulletin* 44 (1), 315--316, <https://doi.org/10.1093/schbul/sby017.770>.
Background. Optimizing psychosocial functioning and overall well-being by reducing the severity of negative symptoms are important outcomes for individuals with schizophrenia. Movement-based therapeutic approaches are uniquely capable of addressing the non-verbal nature of negative symptoms. Dance/Movement Therapy (DMT), a promising treatment for mental health conditions such as schizophrenia, has been found to reduce the occurrence and severity of negative symptoms and to have a positive impact on the psychosocial functioning. Although preliminary findings suggest DMT as a treatment intervention, limited research and inconclusive findings preclude generalizations and more research is needed. We aimed to examine the treatment effects of a 10-week (20 sessions) group DMT treatment program. Methods. We employed a mixed methods intervention design with explanatory intent, in which a randomized controlled trial is followed by semi-structured exit interviews. Thirty-one severely ill individuals diagnosed with schizophrenia participated in the RCT that used a two-arm parallel group design to assess and show the difference between patients receiving standard care (SC) and patients receiving standard care plus DMT on measures of negative symptoms (as primary outcome; PANSS, BNSS) and psychosocial functioning (as secondary outcomes; WHO-DAS 2.0, SDS). Quantitative measures were taken pre and post- intervention. Participants who participated in a minimum of 50% of DMT sessions ($n=15$) were invited to an exit interview. This criterion was also used to analyze quantitative data, leaving $n=28$ for quantitative analysis. Results. All participants in both groups ($n=31$) completed the study. Because of such a small sample size ($n=28$) and a pilot nature of the study we were restricted to use descriptive statistics. The quantitative data suggest that DMT and SC were not equally effective in enhancing primary outcomes. Analysis of the PANSS mean score changes showed a slight increase in the negative symptom in the DMT from 28.33 ± 4.76 to 29.00 ± 4.10 , and slight decrease in

the SC from 28.92 ± 5.72 to 27.08 ± 5.64 . BNSS scores indicate that both groups improved. SC participants reported greater reduction on BNSS overall score from 53.31 ± 11.48 to 47.77 ± 8.10 in comparison to DMT from 53.07 ± 7.27 to 51.93 ± 6.18 . However, DMT participants reported reduction of symptoms in distress, antisocial activity, avolition and verbal expression. Analysis of WHO-DAS suggests that DMT was effective in reduction of disability severity compared to SC. DMT participants reported greater improvement in cognition, mobility, self-care, and getting along. Both groups reported reduction of the impact of difficulties on daily functioning on SDS, however DMT participants reported a greater reduction in days during which they were completely unable to perform or had to limit their usual activities or work due to symptoms. In the SC, the results suggest a reduction in the number of days lost and days of lower productivity. Qualitative findings identified participants' experiences and the most important themes related to benefits of the DMT intervention: enhanced activation, motivation, socialization, and self-awareness. Discussion. Results of this study contribute to knowledge about body-based interventions for schizophrenia and indicate that DMT had an effect on participants psychosocial functioning and coping with negative symptoms. Integration of quantitative and qualitative data provides a wider perspective by gaining a better understanding of the treatment outcomes and explaining inconclusive results. Findings of this study set the stage for larger fully powered research, examining intervention methods and procedures, as well as treatment effects, more thoroughly.

Dibbell-Hope, S. (2000). The use of dance/movement therapy in psychological adaptation to breast cancer-A randomized prospective outcome study. *The Arts in Psychotherapy*, 1(27), 51-68.

Hildebrandt, M., Koch, S., & Fuchs, T. (2016). "We Dance and Find Each Other" 1: Effects of Dance/Movement Therapy on Negative Symptoms in Autism Spectrum Disorder. *Behavioral Sciences*, 6(4), 24.

Abstract. The treatment of deficits in social interaction, a shared symptom cluster in persons with schizophrenia (negative symptoms) and autism spectrum disorder (DSM-5 A-criterion), has so far remained widely unsuccessful in common approaches of psychotherapy. The alternative approach of embodiment brings to focus body-oriented intervention methods based on a theoretic framework that explains the disorders on a more basic level than common theory of mind approaches. The randomized controlled trial at hand investigated the effects of a 10-week manualized dance and movement therapy intervention on negative symptoms in participants with autism spectrum disorder. Although the observed effects failed to reach significance at the conventional 0.05 threshold, possibly due to an undersized sample, an encouraging trend towards stronger symptom reduction in the treatment group for overall negative symptoms and for almost all subtypes was found at the 0.10-level. Effect sizes were small but clinically meaningful, and the resulting patterns were in accordance with theoretical expectations. The study at hand contributes to finding an effective treatment approach for autism spectrum disorder in accordance with the notion of embodiment. [View Full-Text](#)

Keywords: autism spectrum disorder; embodiment; negative symptoms; dance movement therapy; randomized control trial; intervention methods

Ho, R. T. H., Cheung, J. K. K., Chan, W. C., Cheung, I. K. M., & Lam, L. C. W. (2015). A 3-arm randomized controlled trial on the effects of dance movement intervention and exercises on elderly with early dementia. *BMC geriatrics*, 15(1), 127.

Abstract. Background. Dementia is characterized by a progressive decline and deterioration of brain regions such as memory, spatial navigation and language, along with disturbances in daily functioning. Non-pharmacological interventions that offer a holistic approach by targeting cognitive functioning, prognosis and the psychological and social effects of dementia require rigorous investigation. The well-established benefits of physical activity for cognitive functioning and psychological support in dementia have been observed with dance-movement intervention. There is substantial evidence that dance-movement interventions provide emotional and social advantages. Thus, a randomized controlled trial (RCT) is planned to investigate the positive effects of a dance movement intervention, compared with mild physical exercise, on the physical and psychological well-being of elderly Chinese individuals with early dementia.

Methods/Design. A 3-arm RCT with waitlist control design will be used in this study. Two hundred and one elderly participants with very mild to mild dementia will be screened and randomized into the following groups: (i) dance movement based intervention, (ii) stretching and exercise intervention and (iii) no intervention waitlist-control group. The two intervention groups will receive a 1-h intervention, twice a week, for 12 weeks. The participants will be assessed four times over the course of 12 months: baseline before randomization, post-intervention (3 months), 6 months from baseline and 12 months from baseline. The primary outcomes will be compared between assessment points and between groups on neuropsychiatric symptoms, psychosocial well-being and cognitive and daily functioning. Secondary outcomes will assess the changes in salivary cortisol levels and their relationships with the primary outcome measures.

Discussion. This study will provide substantial evidence of the efficacy of a dance-movement-based intervention in slowing down dementia progression, due to its ability to act as a buffer against decline and improve areas affected by dementia. We also anticipate an association between cortisol levels and the outcome measures. The further development of this intervention into a structural program may be warranted for early psychosocial support among elderly populations.

Ho, R. T., Fong, T. C., Chan, W. C., Kwan, J. S., Chiu, P. K., Yau, J. C., & Lam, L. C. (2018).

Psychophysiological Effects of Dance Movement Therapy and Physical Exercise on Older Adults With Mild Dementia: A Randomized Controlled Trial, *The Journals of Gerontology: Series B*, gby145.

Abstract. Objectives. Dementia interferes with older adults' functioning in cognitive, daily, psychosocial, and neuroendocrine domains. The present study examined the psychophysiological effects of dance movement therapy (DMT) and physical exercise for older adults with dementia.

Methods. This randomized controlled trial recruited 204 older adults diagnosed with mild dementia into the DMT, exercise, or waitlist control group. Both DMT and exercise interventions had similar intensity and comprised 24 hr of intervention that spanned over 12 weeks. All participants completed self-report questionnaires on psychosocial well-being, daily functioning, neurocognitive assessments, and salivary cortisol measures at baseline and 3 follow-up measurements more than 1 year.

Results. The DMT group showed significant decreases in depression, loneliness, and negative mood ($d = 0.33-0.42$, $p < .05$) and improved daily functioning ($d = 0.40$, $p < .01$) and diurnal cortisol slope ($d = 0.30$, $p < .01$). The effects on daily functioning and cortisol slope remained at 1-year follow-up. The exercise group of matched intensity showed no significant effects on the outcomes.

Discussion. The study findings support the potential utility of DMT as a multifaceted intervention for improving various aspects of functioning in older adults with declining cognitive abilities. The lack of beneficial effects for our exercise intervention and long-term DMT effects highlights the need to maintain persistent levels of exercise with adequate intensity and duration.

Key words: Biomarkers, Longitudinal change, Memory, Mild cognitive impairment, Psychophysiology

Topic: hydrocortisone dementia exercise biological markers dancing depressive disorders neurosecretory systems waiting lists loneliness memory mood elderly movement therapy cognitive ability

Ho, R. T., Fong, T. C., Cheung, I. K., Yip, P. S., & Luk, M. Y. (2016). Effects of a short-term dance movement therapy program on symptoms and stress in patients with breast cancer undergoing radiotherapy: a randomized, controlled, single-blind trial. *Journal of pain and symptom management*, 51(5), 824-831.

Abstract. Context. Integrated interventions with combined elements of body movement and psychotherapy on treatment-related symptoms in cancer patients are relatively scarce.

Objectives. The aim of the present study is to investigate the effectiveness of dance movement therapy (DMT) on improving treatment-related symptoms in a randomized controlled trial.

Methods. A total of 139 Chinese patients with breast cancer awaiting adjuvant radiotherapy were randomized to DMT or control group. The intervention included six 1.5-hour DMT sessions provided twice a week over the course of radiotherapy. Self-report measures on perceived stress, anxiety, depression, fatigue, pain, sleep disturbance, and quality of life were completed before and after the three-week program.

Results. DMT showed significant effects on buffering the deterioration in perceived stress, pain severity, and pain interference (Cohen $d = 0.34-0.36$, $P < 0.05$). No significant intervention effects were found on anxiety, depression, fatigue, sleep disturbance, and quality of life (Cohen $d = 0.01-0.20$, $P > 0.05$).

Conclusion. The short-term DMT program can counter the anticipated worsening of stress and pain in women with breast cancer during radiotherapy.

Key Words. Breast cancer; dance/movement therapy; pain; perceived stress; randomized controlled trials

Ho, R. T., Fong, T. C., & Yip, P. S. (2018). Perceived stress moderates the effects of a randomized trial of dance movement therapy on diurnal cortisol slopes in breast cancer patients. *Psychoneuroendocrinology*, 87, 119-126.

Highlights

- Moderated mediation analysis evaluated the effect of DMT on diurnal cortisol slopes.
- Overall, DMT did not show a significant effect on diurnal cortisol slope.
- Baseline perceived stress significantly moderated the intervention effect of DMT on diurnal cortisol slope.
- DMT could help in modulating the neuroendocrine response of the distressed patients.

Abstract. Women with breast cancer are at risk of psychosocial distress and may suffer from aberrant diurnal cortisol rhythms. Dance movement therapy (DMT), a movement-based psychotherapy that incorporates exercise and artistic components, has demonstrated stress reduction effects. This study examined the effects of DMT on the diurnal cortisol rhythms of breast cancer patients undergoing radiotherapy treatment and the role of perceived stress in producing such effects. The study sample comprised 121 Chinese breast cancer patients randomized to the DMT ($n = 63$) and control ($n = 58$) groups. The intervention consisted of six 1.5-h group sessions held twice weekly over the course of radiotherapy. Participants completed validated self-report measures of perceived stress, fatigue, pain, and sleep disturbance and provided five salivary cortisol samples at baseline (Time 1) and post-intervention (Time 2). Moderated mediation analysis was used to evaluate the intervention effect on Time 2 diurnal cortisol slopes. Despite the absence of a significant DMT effect on diurnal cortisol slopes ($B = -0.55$, 95% CI = -1.20 to 0.08 , $\beta = -0.14$), baseline perceived stress significantly moderated the intervention effect ($B = -0.18$, 95% CI = -0.32 to -0.05 , $\beta = -0.30$). At high levels of baseline perceived stress (1 SD above the mean), the DMT group showed a steeper cortisol slope ($M = -7.14$) than the control group ($M = -5.80$) at Time 2. The present findings suggest that DMT might have a beneficial effect on diurnal cortisol slopes in breast cancer patients with high levels of distress.

Keywords. Salivary cortisol; Perceived stress; Randomized controlled trial; Moderation; Breast cancer; DMT

Ho, R. T., Lo, P. H., & Luk, M. Y. (2016). A good time to dance? A mixed-methods approach of the effects of dance movement therapy for breast cancer patients during and after radiotherapy. *Cancer nursing*, 39(1), 32-41.

Background: Dance movement therapy (DMT) is premised on an interconnected body and mind. It has known benefits for cancer patients' physical and psychological health and quality of life.

Objective: To offer greater insight into a previous randomized controlled trial, the present study qualitatively explored the beneficial elements of DMT over the course of radiotherapy. To better understand the uniqueness of DMT intervention for patients receiving radiotherapy, the study statistically compared them with patients who received DMT after treatment completion.

Methods: Participants were randomized into radiotherapy and postradiotherapy control groups. The radiotherapy group received DMT (6 sessions at 90 minutes each) as they were undergoing radiotherapy. The postradiotherapy group was provided with the same DMT intervention at 1 to 2 months after completing radiotherapy.

Results: One hundred and four participants identified 5 main benefit categories. Dance movement therapy helped them (1) cope with cancer, treatment, and physical symptoms; (2) improve mental well-being, attention, and appreciation for the self and body; (3) improve total functioning; (4) bridge back to a normal and better life; and (5) participate in shared positive experiences. The radiotherapy group reported categories 1 and 2 more prominent

Hokkanen, L., Rantala, L., Remes, A. M., Härkönen, B., Viramo, P., & Winblad, I. (2003). Dance/movement therapeutic methods in management of dementia. *Journal of the American Geriatrics Society*, 51(4), 576-577.

Jeong, Y. J., Hong, S. C., Lee, M. S., Park, M. C., Kim, Y. K., & Suh, C. M. (2005). Dance movement therapy improves emotional responses and modulates neurohormones in adolescents with mild depression. *International journal of neuroscience*, 115(12), 1711-1720.

Abstract. This study assessed the profiles of psychological health and changes in neurohormones of adolescents with mild depression after 12 weeks of dance movement therapy (DMT). Forty middle school seniors (mean age: 16 years old) volunteered to participate in this study and were randomly assigned into either a dance movement group (n = 20) or a control group (n = 20). All subscale scores of psychological distress and global scores decreased significantly after the 12 weeks in the DMT group. Plasma serotonin concentration increased and dopamine concentration decreased in the DMT group. These results suggest that DMT may stabilize the sympathetic nervous system. In conclusion, DMT may be effective in beneficially modulating concentrations of serotonin and dopamine, and in improving psychological distress in adolescents with mild depression.

Key Words: adolescent, dance movement therapy, depression, emotion, neurohormone

Jongen, P. J., Heerings, M., Ruimschotel, R., Hussaarts, A., Evers, S., Duyverman, L., ... & Lemmens, W. A. (2016). An intensive social cognitive program (can do treatment) in people with relapsing remitting multiple sclerosis and low disability: a randomized controlled trial protocol. *BMC neurology*, 16(1), 81.

Abstract. Background. In people with multiple sclerosis (MS) disabilities and limitations may negatively affect self-efficacy. Lowered self-efficacy has been associated with decreases in health-related quality of life, physical activity and cognitive performance. In an explorative observational study we found that a 3-day intensive social cognitive program (Can Do Treatment [CDT]) with the participation of support partners was followed by substantial increases in self-efficacy control and health-related quality of life 6 months after treatment in those people with MS who had relapsing remitting disease and low disability.

Methods/Design. CDT is a sociologically oriented approach, its goal is to uncover and promote existing capabilities, and the notion “stressor” is the central concept. CDT’s components are plenary group sessions, small group sessions, consultations, a theatre evening, and start of the day with a joint activity. The small group sessions form the actual training. Depending on their individual goals the participants join the training groups ‘Body’, ‘Feeling’ or ‘Life’, to work out their aims and to reduce their stressors. The multidisciplinary team includes a psychiatrist, psychiatric nurse, neurologist, specialized MS nurse, physiotherapist, dance therapist, and a person with MS. To evaluate the (cost)effectiveness of CDT in persons with relapsing remitting MS and low disability we perform a single-centre, randomized controlled trial in 140 patients, with or without support partners. The primary outcome is self-efficacy control. The secondary outcomes are self-efficacy function, health-related quality of life, autonomy and participation, anxiety, depression, cost effectiveness and cost utility. The tertiary outcome is care-related strain to support partners. Outcomes are assessed at baseline and at 1, 3 and 6 months after CDT.

Discussion. This randomized controlled trial will adequately evaluate the clinical and cost effectiveness of a 3-day intensive social cognitive program in people with relapsing remitting MS and low disability, with self-efficacy control as primary outcome.

Koch, S. C., Mehl, L., Sobanski, E., Sieber, M., & Fuchs, T. (2015). Fixing the mirrors: A feasibility study of the effects of dance movement therapy on young adults with autism spectrum disorder. *Autism, 19*(3), 338-350.

Abstract. From the 1970s on, case studies reported the effectiveness of therapeutic mirroring in movement with children with autism spectrum disorder. In this feasibility study, we tested a dance movement therapy intervention based on mirroring in movement in a population of 31 young adults with autism spectrum disorder (mainly high-functioning and Asperger's syndrome) with the aim to increase body awareness, social skills, self-other distinction, empathy, and well-being. We employed a manualized dance movement therapy intervention implemented in hourly sessions once a week for 7 weeks. The treatment group (n = 16) and the no-intervention control group (n = 15) were matched by sex, age, and symptom severity. Participants did not participate in any other therapies for the duration of the study. After the treatment, participants in the intervention group reported improved well-being, improved body awareness, improved self-other distinction, and increased social skills. The dance movement therapy-based mirroring approach seemed to address more primary developmental aspects of autism than the presently prevailing theory-of-mind approach. Results suggest that dance movement therapy can be an effective and feasible therapy approach for autism spectrum disorder, while future randomized control trials with bigger samples are needed.

Madden, J. R., Mowry, P., Gao, D., McGuire Cullen, P., & Foreman, N. K. (2010). Creative arts therapy improves quality of life for pediatric brain tumor patients receiving outpatient chemotherapy. *Journal of Pediatric Oncology Nursing, 27*(3), 133-145.

Abstract. This mixed methods pilot study evaluated the effects of the creative arts therapy (CAT) on the quality of life (QOL) of children receiving chemotherapy. A 2-group, repeated measures randomized design compared CAT with a volunteer's attention (n = 16). Statistical analysis of the randomized controlled phase of the study suggested an improvement in the following areas after the CAT: parent report of child's hurt (P = .03) and parent report of child's nausea (P = .0061). A nonrandomized phase, using a different instrument showed improved mood with statistical significance on the Faces Scale (P < .01), and patients were more excited (P < .05), happier (P < .02), and less nervous (P < .02). Provider focus groups revealed positive experiences. Case studies are included to exemplify the therapeutic process. With heightened interest in complementary therapy for children with cancer, future research with a larger sample size is needed to document the impact of incorporating creative arts into the healing process.

Keywords creative arts therapy, pediatric cancer, brain tumors, quality of life

Martin, L. A., Koch, S. C., Hirjak, D., & Fuchs, T. (2016). Overcoming disembodiment: The effect of movement therapy on negative symptoms in schizophrenia—A multicenter randomized controlled trial [Die Entkörperlichung bezwingen: Effekt von Bewegungstherapie auf negative Schizophrenie-Symptome in einer multizentrischen randomisiert-kontrollierten Studie]. *Frontiers in psychology, 7*, 483.

Objective: Negative symptoms of patients with Schizophrenia are resistant to medical treatment or conventional group therapy. Understanding schizophrenia as a form of disembodiment of the self, a number of scientists have argued that the approach of embodiment and associated embodied therapies,

such as Dance and Movement Therapy (DMT) or Body Psychotherapy (BPT), may be more suitable to explain the psychopathology underlying the mental illness and to address its symptoms. Hence the present randomized controlled trial (DRKS00009828, <http://apps.who.int/trialsearch/>) aimed to examine the effectiveness of manualized movement therapy (BPT/DMT) on the negative symptoms of patients with schizophrenia.

Method: A total of 68 out-patients with a diagnosis of a schizophrenia spectrum disorder were randomly allocated to either the treatment (n = 44, 20 sessions of BPT/DMT) or the control condition [n = 24, treatment as usual (TAU)]. Changes in negative symptom scores on the Scale for the Assessment of Negative Symptoms (SANS) were analyzed using Analysis of Covariance (ANCOVA) with Simpson-Angus Scale (SAS) scores as covariates in order to control for side effects of antipsychotic medication. **Results:** After 20 sessions of treatment (BPT/DMT or TAU), patients receiving movement therapy had significantly lower negative symptom scores (SANS total score, blunted affect, attention). Effect sizes were moderate and mean symptom reduction in the treatment group was 20.65%.

Conclusion: The study demonstrates that embodied therapies, such as BPT/DMT, are highly effective in the treatment of patients with schizophrenia. Results strongly suggest that BPT/DMT should be embedded in the daily clinical routine.

Mastrominico, A., Fuchs, T., Manders, E., Steffinger, L., Hirjak, D., Sieber, M., ... & Koch, S. (2018). Effects of Dance Movement Therapy on Adult Patients with Autism Spectrum Disorder: A Randomized Controlled Trial. *Behavioral Sciences*, 8(7), 61.

Abstract. This study examines the effects of dance movement therapy (DMT) on empathy for adults with autism spectrum disorder (ASD). DMT based on the embodiment approach offers body-centered interventions, such as mirroring techniques, to address the needs of ASD patients. Accordingly, findings of a feasibility study suggest that DMT may be an effective approach for clients on the ASD spectrum. The present study is a randomized controlled trial that was conducted as a multicenter study within the framework of the EU-funded research project TESIS (Toward an Embodied Science of Intersubjectivity), and employed a two-factorial between-subject design. The treatment group (n = 35) participated in a 10-week manualized DMT intervention, whereas the control group (n = 22) received treatment only after a waiting period. Empathy, measured with the Cognitive and Emotional Empathy Questionnaire (CEEQ), was the main variable of interest, analyzed by a repeated measures analysis of variance. In order to also include incomplete data cases, we used the expectation-maximization algorithm for missing data estimation. Results suggest no significant changes in overall empathy between groups. We discuss the results and limitations, as well as future research options. [View Full-Text](#)

Keywords: dance movement therapy; DMT; autism spectrum disorder (ASD); randomized controlled trial; embodiment; empathy; mirroring

Michels, K., Dubaz, O., Hornthal, E., Bega, D. (2018): "Dance therapy" as a psychotherapeutic movement intervention in Parkinson's disease. *Complementary Therapies in Medicine* 40, 248--252, <https://doi.org/10.1016/j.ctim.2018.07.005>

Papadopoulos, N. L., & Röhrich, F. (2014). An investigation into the application and processes of manualised group body psychotherapy for depressive disorder in a clinical trial. *Body, Movement and Dance in Psychotherapy*, 9(3), 167-180.

Abstract. Background: Body-oriented psychological therapy (BOPT) has been described as effective in addressing depressive symptoms. There is, however, a paucity of research into the processes leading to change and the actual experience of the patients and the therapist in delivering BOPT interventions.

Method: Secondary qualitative analysis of data obtained within an exploratory randomised controlled trial of manualised body psychotherapy (BPT) for patients with chronic depression, analysing qualitative aspects of change processes during therapy, was conducted. **Results:** At the beginning of therapy, most patients presented with a restricted, emotionally dissociated and inwardly directed range of expressive behaviours, associated with isolation of emotions from self-awareness. Clinically relevant changes in body postures and gestures were associated with feelings of empowerment; connecting repressed anger with feelings of sadness appears to have resulted in enhanced levels of self-confidence and improvements of depressed mood. Body satisfaction scores improved slightly. **Conclusion:** Patients with chronic depression may benefit from specific BPT interventions. These interventions appear to be particularly effective in assisting patients to identify and express a wide range of feelings.

Keywords: body psychotherapy, depression, embodiment

Priebe, S., Savill, M., Reininghaus, U., Wykes, T., Bentall, R., Lauber, C., ... & Eldridge, S. (2013).

Effectiveness and cost-effectiveness of body psychotherapy in the treatment of negative symptoms of schizophrenia—a multi-centre randomised controlled trial. *BMC psychiatry*, 13(1), 26.

Abstract. Background. Negative symptoms of schizophrenia are frequently associated with poor long term outcomes. Established interventions have little, if any, positive effects on negative symptoms. Arts Therapies such as Body Psychotherapy (BPT) have been suggested to reduce negative symptoms, but the existing evidence is limited. In a small exploratory trial a manualised form of group BPT led to significantly lower negative symptom levels both at the end of treatment and at 4 months follow-up as compared to supportive counseling. We designed a large multi-site trial to assess the effectiveness of a manualised BPT intervention in reducing negative symptoms, compared to an active control.

Methods/Design. In a randomised controlled trial, 256 schizophrenic outpatients with negative symptoms will be randomly allocated either to BPT or Pilates groups. In both conditions, patients will be offered two 90 minutes sessions per week in groups of about 8 patients over a period of 10 weeks. Outcomes are assessed at the end of treatment and at six months follow-up. The primary outcome is severity of negative symptoms, as measured by the Positive and Negative Symptom Scale (PANSS), whilst a range of secondary outcome measures include general psychopathology, social contacts, and quality of life. We will also assess the cost-effectiveness of the intervention.

Discussion. The study aims to evaluate the effectiveness of a promising form of group therapy which may help alleviate negative symptoms that are associated with unfavourable long-term outcomes and have so far been difficult to treat. If the trial is successful, it will add a new and effective option in the treatment of negative symptoms. Group BPT is manualised, might be attractive to many patients because of its unusual approach, and could potentially be rolled out to services at relatively little additional cost.

Key words: Schizophrenia; National Health Service; Negative Symptom; Exploratory Trial; Physical Activity Group

Priebe, S., Savill, M., Wykes, T., Bentall, R., Lauber, C., Reininghaus, U., ... & Roehricht, F. (2016). Clinical effectiveness and cost-effectiveness of body psychotherapy in the treatment of negative symptoms of schizophrenia: a multicentre randomised controlled trial. *Health technology assessment (Winchester, England)*, 20(11), 1.

(English) ; Abstract available. By: Priebe S; Savill M; Wykes T; Bentall R; Lauber C; Reininghaus U; McCrone P; Mosweu I; Bremner S; Eldridge S; Röhricht F; NESS team, Health Technology Assessment (Winchester, England) [Health Technol Assess], ISSN: 2046-4924, 2016 Feb; Vol. 20 (11), 1-100.

Abstract. **BACKGROUND:** The negative symptoms of schizophrenia significantly impact on quality of life and social functioning, and current treatment options are limited. In this study the clinical effectiveness and cost-effectiveness of group body psychotherapy as a treatment for negative symptoms were compared with an active control.

DESIGN: A parallel-arm, multisite randomised controlled trial. Randomisation was conducted independently of the research team, using a 1 : 1 computer-generated sequence. Assessors and statisticians were blinded to treatment allocation. Analysis was conducted following the intention-to-treat principle. In the cost-effectiveness analysis, a health and social care perspective was adopted.

PARTICIPANTS:

ELIGIBILITY CRITERIA: age 18-65 years; diagnosis of schizophrenia with symptoms present at > 6 months; score of ≥ 18 on Positive and Negative Syndrome Scale (PANSS) negative symptoms subscale; no change in medication type in past 6 weeks; willingness to participate; ability to give informed consent; and community outpatient.

EXCLUSION CRITERIA: inability to participate in the groups and insufficient command of English.

SETTINGS: Participants were recruited from NHS mental health community services in five different Trusts. All groups took place in local community spaces.

INTERVENTIONS: Control intervention: a 10-week, 90-minute, 20-session group beginners' Pilates class, run by a qualified Pilates instructor. Treatment intervention: a 10-week, 90-minute, 20-session manualised group body psychotherapy group, run by a qualified dance movement psychotherapist.

OUTCOMES: The primary outcome was the PANSS negative symptoms subscale score at end of treatment. Secondary outcomes included measures of psychopathology, functional, social, service use and treatment satisfaction outcomes, both at treatment end and at 6-month follow-up.

RESULTS: A total of 275 participants were randomised (140 body psychotherapy group, 135 Pilates group). At the end of treatment, 264 participants were assessed (137 body psychotherapy group, 127 Pilates group). The adjusted difference in means of the PANSS negative subscale at the end of treatment was 0.03 [95% confidence interval (CI) -1.11 to 1.17], showing no advantage of the intervention. In the secondary outcomes, the mean difference in the Clinical Assessment Interview for negative symptoms expression subscale at the end of treatment was 0.62 (95% CI -1.23 to 0.00), and in extrapyramidal movement disorder symptoms -0.65 (95% CI -1.13 to -0.16) at the end of treatment and -0.58 (95% CI -1.07 to -0.09) at 6 months' follow-up, showing a small significant advantage of body psychotherapy. No

serious adverse events related to the interventions were reported. The total costs of the intervention were comparable with the control, with no clear evidence of cost-effectiveness for either condition.

LIMITATIONS: Owing to the absence of a treatment-as-usual arm, it is difficult to determine whether or not both arms are an improvement over routine care.

CONCLUSIONS: In comparison with an active control, group body psychotherapy does not have a clinically relevant beneficial effect in the treatment of patients with negative symptoms of schizophrenia. These findings conflict with the review that led to the current National Institute for Health and Care Excellence guidelines suggesting that arts therapies may be an effective treatment for negative symptoms.

FUTURE WORK: Determining whether or not this lack of effectiveness extends to all types of art therapies would be informative.

Priebe, S., Savill, M., Wykes, T., Bentall, R. P., Reininghaus, U., Lauber, C., ... & Röhrich, F. (2016).

Effectiveness of group body psychotherapy for negative symptoms of schizophrenia: multicentre randomised controlled trial. *The British Journal of Psychiatry*, 209(1), 54-61.

Abstract. Background. Negative symptoms of schizophrenia have a severe impact on functional outcomes and treatment options are limited. Arts therapies are currently recommended but more evidence is required.

Aims. To assess body psychotherapy as a treatment for negative symptoms compared with an active control (trial registration: ISRCTN84216587).

Method. Schizophrenia out-patients were randomised into a 20-session body psychotherapy or Pilates group. The primary outcome was negative symptoms at end of treatment. Secondary outcomes included psychopathology, functional, social and treatment satisfaction outcomes at treatment end and 6-months later.

Results. In total, 275 participants were randomised. The adjusted difference in negative symptoms was 0.03 (95% CI -1.11 to 1.17), indicating no benefit from body psychotherapy. Small improvements in expressive deficits and movement disorder symptoms were detected in favour of body psychotherapy. No other outcomes were significantly different.

Conclusions. Body psychotherapy does not have a clinically relevant beneficial effect in the treatment of patients with negative symptoms of schizophrenia.

Röhrich, F., Papadopoulos, N., Holden, S., Clarke, T., & Priebe, S. (2011). Therapeutic processes and clinical outcomes of body psychotherapy in chronic schizophrenia—An open clinical trial. *The Arts in Psychotherapy*, 38(3), 196-203.

Persistent negative symptoms are an ongoing challenge in the treatment of chronic schizophrenia.

Evidence from randomised controlled trials suggests that arts/non-verbal therapies may be effective in treating negative symptoms of schizophrenia. These treatments have not yet been evaluated in open clinical settings.

The present uncontrolled clinical trial examines the therapeutic processes and clinical outcomes of group body psychotherapy (BPT) on marked negative symptoms in patients with chronic schizophrenia. Changes in symptom scores, subjective quality of life, social functioning and emotional processing

between baseline and post-treatment were assessed. The ratings from clinical assessments of independent researchers were compared with the post-therapy summary assessment of the therapists.

A total of 39 eligible patients were referred, out of which 18 patients agreed to participate and received BPT in addition to treatment as usual within three therapy groups run by different therapists. Patients had high symptom levels and low psychosocial functioning at baseline. Negative symptoms and general psychopathology significantly reduced during treatment. Positive symptoms and other outcomes did not change. Researcher ratings of psychopathology were in line with the assessment of clinical outcome by therapists and qualitative observations on changes in movement behaviour during therapy.

The results of this study are consistent with findings from a RCT (Röhrich & Priebe, 2006), indicating that BPT is associated with reduced negative symptoms even when administered in routine clinical settings. Therapists' qualitative judgements may be considered as a valid source for assessing treatment outcomes. Future studies should explore effects of longer term treatments on other outcomes.

Keywords: Body psychotherapy; Dance/movement therapy; Schizophrenia; Negative symptoms; Therapeutic processes

Röhrich, F., Papadopoulos, N., & Priebe, S. (2013). An exploratory randomized controlled trial of body psychotherapy for patients with chronic depression. *Journal of affective disorders*, 151(1), 85-91.

Abstract. Background. Chronic major depressive disorder and dysthymia are associated with a high burden and substantial care costs. New and more effective treatments are required. This is the first randomized controlled trial designed to evaluate the effectiveness of Body Psychotherapy (BPT) in patients with chronic depression.

Methods. Patients with chronic depressive syndromes (more than 2 years symptomatic) and a total score of ≥ 20 on the Hamilton Rating Scale for Depression (HAM-D) were randomly allocated to either immediate BPT or a waiting group which received BPT 12 weeks later. BPT was manualized, delivered in small groups in 20 sessions over a 10 weeks period, and provided in addition to treatment as usual. In an intention to treat analysis, primary outcome were depressive symptoms at the end of treatment adjusted for baseline symptom levels. Secondary outcomes were self-esteem and subjective quality of life.

Results. Thirty-one patients were included and twenty-one received the intervention. At the end of treatment patients in the immediate BPT group had significantly lower depressive symptom scores than the waiting group (mean difference 8.7, 95% confidence interval 1.0–16.7). Secondary outcomes did not show statistically significant differences. When the scores of the waiting group before and after BPT (as offered after the waiting period) were also considered in the analysis, the differences with the initial waiting group remained significant.

Conclusions. The results suggest that BPT may be an effective treatment option for patients with chronic depression. Difficulty recruiting and subsequent attrition was one of the limitations, but the findings merit further trials with larger samples and process studies to identify the precise therapeutic mechanisms

Sandel, S. L., Judge, J. O., Landry, N., Faria, L., Ouellette, R., & Majczak, M. (2005). Dance and movement program improves quality-of-life measures in breast cancer survivors. *Cancer nursing*, 28(4), 301-309.

A pilot research study was conducted at 2 cancer centers in Connecticut to determine the effect of a dance and movement program on quality of life and shoulder function in breast cancer survivors treated within

the prior 5 years. Thirty-five women completed the trial that included a 12-week intervention, using The Lebed Method, Focus on Healing Through Movement and Dance. The study design was a randomized control trial with a wait list control group crossover to active treatment in weeks 13 to 25, with the treatment group receiving the program in weeks 1 to 12, and no program in weeks 13 to 25. Outcome measures were the Breast Cancer Quality of Life (FACT-B), Shoulder range of motion (ROM), and Body Image Scale. FACT-B significantly improved in the intervention group at 13 weeks from 102.0 ± 15.8 to 116.7 ± 16.9 , compared to the wait list group 108.1 ± 16.4 to 107.1 ± 21.3 (time \times group effect, $P = .008$). During the crossover phase, the FACT-B score increased in the wait list group and was stable in the treatment group. The overall effect of the training at 26 weeks was significant (time effect, $P = .03$), and the order of training was also significant ($P = .015$). Shoulder ROM increased in both groups at 13 weeks— 15° and 8° in the intervention and wait list groups (Time effect, $P = .03$; time \times group, $P = .58$). Body Image improved similarly in both groups at 13 weeks (time effect, $P = .001$; time \times group, $P = .25$), and at 26 weeks. There was no significant effect of the order of training for these outcome measures. A dance movement program that addressed the physical and emotional needs of women following treatment for breast cancer substantially improved a breast cancer-specific quality-of-life measure. Larger studies are justified to determine the acceptability of this therapy as part of the continuum of care for breast cancer survivors.

Serrano-Guzman, M., Valenza-Pena, C. M., Serrano-Guzman, C., Aguilar-Ferrandiz, E., Valenza-Demet, G., & Villaverde-Gutierrez, C. (2016). Effects of a dance therapy programme on quality of life, sleep and blood pressure in middle-aged women: A randomised controlled trial. *Medicina Clínica (English Edition)*, 147(8), 334-339.

Abstract. Background and objective. Evidence suggests that dance therapy may have positive effects in areas such as cardiovascular parameters and sleep. The aim of the present study is to explore whether a dance therapy programme improves sleep and blood pressure in a population of middle-aged pre-hypertensive and hypertensive women.

Methods. A randomised controlled trial was conducted, in which participants were assigned to one of 2 groups: standard care (with usual activities and medication) or dance therapy (in which the participants followed a dance therapy programme, in addition to their medication). The intervention was an 8-week, 3-times-per-week, progressive and specific group dance-training programme. The dance steps were specifically designed to improve balance by shifting the body and relocating the centre of gravity. The main measures obtained were blood pressure, sleep quality and quality of life, measured by the Pittsburgh Sleep Quality Index and the European Quality of Life Questionnaire.

Results. Sixty-seven pre-hypertensive and hypertensive middle-aged women were randomised to either an intervention group ($n = 35$) or a control group ($n = 32$) after baseline testing. The intervention group reported a significant improvement in blood pressure values ($p < 0.01$), as well as in sleep quality ($p < 0.05$) and quality of life ($p < 0.001$), compared to the control group.

Conclusion. The dance therapy programme improved blood pressure, sleep and quality of life in pre-hypertensive and hypertensive middle-aged women, and constitutes an interesting basis for larger-scale research.

Keywords. Dance therapy; Hypertension; Quality of life; Sleep; Women

Resumen. Fundamento y objetivo. Existe evidencia sobre los efectos positivos de la danza, como la mejora de los parámetros cardiovasculares y del sueño. El objetivo del presente estudio ha sido explorar si un programa de terapia de baile es capaz de mejorar el sueño y la presión arterial en mujeres de mediana edad, prehipertensas e hipertensas.

Métodos. Se diseñó un ensayo aleatorizado y controlado, donde las participantes fueron asignadas a uno de 2 grupos: grupo control (donde las participantes continuaron con sus actividades y medicación habitual) o grupo de terapia de baile (donde las participantes siguieron un programa de terapia de baile, además de su medicación). La intervención consistió en un programa de baile-entrenamiento específico y progresivo durante 8 semanas, a razón de 3 sesiones semanales. Los pasos de baile fueron específicamente seleccionados para mejorar el equilibrio, desplazando el cuerpo y reubicando el centro de gravedad. Las medidas de resultado fueron la presión arterial, la calidad del sueño y la calidad de vida, estas 2 últimas medidas por el Pittsburgh Sleep Quality Index y el Cuestionario Europeo sobre Calidad de Vida, respectivamente.

Resultados. Se asignó al azar, a un total de 67 mujeres de mediana edad prehipertensas e hipertensas a un grupo de intervención (n = 35), o como controles (n = 32), después de las pruebas basales. El grupo de intervención informó de mejoras significativas en los valores de la presión arterial ($p < 0,01$), así como en la calidad del sueño ($p < 0,05$) y la calidad de vida ($p < 0,001$) en comparación con el grupo control.

Conclusión. El programa de terapia de baile mejoró la presión arterial, el sueño y la calidad de vida en mujeres de mediana edad prehipertensas e hipertensas, proporcionando la base para continuar la investigación con estudios más amplios.

Palabras clave. Danzaterapia; Hipertensión; Calidad de vida; Sueño; Mujer

Theorell, T., & Anderberg, U. M. (2003). Dance/movement therapy and changes in stress-related hormones: a study of fibromyalgia patients with video-interpretation. *The Arts in Psychotherapy*, 30, 255-264.

3. Other Studies on DMT OR Dance OR Tango AND research

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