



Science, Movement and Health, Vol. XXIII, ISSUE 2 Supplement, 2023
September 2023, 23 (2): 347-350
Original article

TANGO THERAPY: AN INNOVATIVE APPROACH FOR PARKINSON'S PATIENTS - FACTS FROM THE LITERATURE

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Abstract

Aim. Parkinson's disease is a chronic neurodegenerative disorder that primarily affects older individuals, causing motor and non-motor symptoms. Tango therapy, a combination of physical, cognitive, and music therapy, has shown promising results in improving symptoms of depression, anxiety, and stress in individuals with this condition. Additionally, tango therapy enhances balance, coordination, posture, and mobility, with a positive impact on self-esteem and social interactions. Tango therapy can be adapted for home-based treatment and holds potential as an innovative and effective intervention for individuals with Parkinson's disease, offering benefits in various aspects of well-being.

Keywords: Parkinson's disease, disability, medical recovery, impact

Introduction

Parkinson's disease (PD) is one of the most common causes of disability among older people. It is a chronic progressive neurodegenerative disease characterised by motor symptoms such as bradykinesia, extrapyramidal rigidity, resting tremor, flexed posture and small steps gait, and balance deficits with a high risk of falling. (Bevilacqua R. et al, 2020). It is worth mentioning that balance disorders are a symptom involving the body axis and also do not respond to dopaminergic therapy used in this condition. Precisely because of this, physiotherapy is an important initiative for the management of motor disorders. (Bevilacqua R. et al, 2020)

Methods

We conducted a comprehensive analysis of published articles and utilized relevant search criteria from PubMed and Google Scholar databases to obtain the necessary information regarding the impact of tango therapy on patients with Parkinson's disease. Within our evaluation, we focused on studies that investigated the recovery of Parkinson's patients through tango therapy.

Parkinson's disease - general facts:

James Parkinson first described Parkinson's disease in 1817 under the name "paralysis agitans". It is the second most prevalent neurological disorder, following Alzheimer's disease, and is associated with significant disability and a decline in quality of life. The occurrence of Parkinson's disease is more common in developed countries and tends to increase with age. While it is rare in individuals under 40, it affects approximately 1-2% of the population over 65 and 4-5% of those over 85. Men have a higher incidence of the disease, possibly due to the protective effects of estrogen in women. However, certain factors such as smoking and coffee consumption have been found to potentially reduce the risk. Nicotine acts as an inhibitor of monoamine oxidase-B (MAO-B), while caffeine acts as an antagonist to adenosine A2a receptors, which may offer neuroprotective effects. (Váradi, Csaba, 2020) Limited knowledge is available regarding the onset of Parkinson's disease (PD), but certain factors are associated with its development. Environmental risk factors include exposure to toxins such as paraquat, rotenone, and methanol, as well as carbon monoxide poisoning and head trauma.

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Genetic mutations in the SNCA, LRRK2, and GBA genes can also lead to neurodegeneration. These factors, combined with aging, can cause mitochondrial dysfunction and increased oxidative stress, leading to neuronal energy

failure and neurodegeneration. PD is characterized as a synucleopathy, characterized by the abnormal accumulation of α -synuclein and the formation of intracellular aggregates known as Lewy bodies (LBs). (Váradi, Csaba, 2020)

The diagnosis is based on the clinical evaluation of typical manifestations, such as involuntary movements, muscle rigidity, coordination difficulties, and balance disturbances. Additionally, the patient's medical history and the results of supplementary tests, such as brain imaging and laboratory analyses, are taken into consideration. One of the most commonly used diagnostic criteria is the diagnostic criteria of the International Parkinson and Movement Disorder Society (MDS-UPDRS), which provides a detailed assessment of motor and non-motor symptoms. Early and accurate diagnosis of Parkinson's disease is essential to initiate appropriate treatment and effectively manage the patient's symptoms. (Postuma RB, Berg D, Stern M, et al, 2015)

Treatment in Parkinson's disease:

Treatment for Parkinson's disease typically involves a combination of medications, therapy, and lifestyle changes to improve quality of life. Medications commonly prescribed include levodopa, dopamine agonists, and MAO-B inhibitors, which are aimed at managing motor symptoms and increasing dopamine levels in the brain. Physical therapy and exercise programs can enhance mobility, strength, and balance for individuals with Parkinson's disease. Additionally, speech therapy and occupational therapy can help address speech difficulties and fine motor skills. Deep brain stimulation (DBS) surgery may be recommended for advanced Parkinson's patients who have not responded well to medication. (Connolly BS, Lang AE, 2014)

The management of Parkinson's disease should prioritize individualized care that targets both motor and non-motor symptoms. In addition to dopamine replacement, it is crucial to address other circuits beyond the dopaminergic system. This includes focusing on noradrenergic and serotonergic circuits, as well as cholinergic circuits that can bypass the gastrointestinal tract through infusion or device therapies. Examples of these therapies for the management of advanced Parkinson's disease include intestinal gel infusion, subcutaneous apomorphine infusion, and deep brain stimulation. These treatment options are available in many countries and aim to alleviate the symptoms of advanced Parkinson's disease. (Metta V et al, 2021)

Alternative treatments that help manage Parkinson's disease include a variety of non-pharmacological approaches. There is a wide range of techniques available for this purpose, including tai chi, yoga, massage, acupuncture, dance, traditional herbs, and targeted molecular therapies, among others. Physical therapy involves different strategies that have been commonly utilized in the rehabilitation of patients with Parkinson's disease, with the primary goal of improving their quality of life. (Auxiliadora de Paula Vasconcelos L., 2020)

Benefits of Tango Therapy:

Dancing is a multidimensional activity that engages multiple sensory systems, fosters social interaction, promotes motor learning, and enhances emotional expression. Tango involves dynamic balance, turning, initiating movement, and varying speeds, often in close proximity to a dance partner. These features make tango a potentially beneficial activity for individuals with Parkinson's disease. (Docu Axelerad A, Stroe AZ, Muja LF, Docu Axelerad S, Chita DS, Frecus CE, Mihai CM., 2022)

Dance therapy, particularly the use of tango, has emerged as a promising rehabilitative approach for individuals diagnosed with Parkinson's disease. Research studies have demonstrated notable improvements in anxiety and depression symptoms following regular participation in tango dancing. The unique movements involved in tango stimulate the basal ganglia and activate various regions of the brain, facilitating motor coordination and rhythm. By utilizing auditory cues, such as music, tango therapy can circumvent dysfunctional circuits in the basal ganglia, thereby enhancing mobility. Tango therapy encompasses a comprehensive range of techniques, including cognitive movement strategies, cueing methods, balance exercises, and physical activity, offering a holistic approach to physical rehabilitation. ((Docu Axelerad A, Stroe AZ, Muja LF, Docu Axelerad S, Chita DS, Frecus CE, Mihai CM., 2022)

Moreover, this form of therapy is both engaging and enjoyable, lending itself well to home-based treatment. Tango therapy holds significant promise as an innovative and effective intervention for individuals living with Parkinson's disease. (Docu Axelerad A, Stroe AZ, Muja LF, Docu Axelerad S, Chita DS, Frecus CE, Mihai CM., 2022)

Recent research suggests that tango holds promise as a beneficial intervention for individuals affected by Parkinson's disease, particularly in improving symptoms related to balance. There have been some modest improvements observed in other motor and non-motor symptoms as well. However, the impact of tango on personal relationships and emotional well-being requires further investigation. Additionally, more research is needed to explore the motivational aspects of tango therapy for individuals with Parkinson's disease. Future studies should involve larger participant groups and examine the long-term effects of tango as a therapeutic approach. (Lötze D, Ostermann T, Büssing A.)

Argentine tango has been utilized as a therapeutic modality for neurological disorders, particularly Parkinson's disease, for many years. In recent times, there has been an increasing recognition of the importance of a functional and anatomical approach to tango therapy that incorporates the intricate elements of this therapy. To facilitate this, a standardized tango terminology has been established to systematically describe the therapeutic elements involved. The fundamental components of tango are categorized based on the therapeutic advantages they offer, and a thorough analysis has been conducted on aspects such as posture, stance, tango gait, and tango ocho, exploring their functional and anatomical characteristics. (Koh Y, Noh G., 2020)

Tango therapy is highly appropriate for individuals with neurological conditions and older individuals due to its safety and ability to accommodate slow-paced movements. It offers effective exercise benefits by engaging movements that fall within a natural range and maintain balance. Tango therapy encompasses various physical therapy techniques, combined with elements of music therapy and cognitive therapy. (Koh Y, Noh G., 2020)

Practicing Argentine tango can bring significant benefits in multiple aspects of well-being, including physical, emotional, cognitive and social. It has been found to relieve symptoms of depression, anxiety and stress, while promoting self-confidence, life satisfaction and a positive body perception. Tango also helps improve balance, coordination, posture, strength, endurance, shoulder mobility and body mechanics. Practicing tango can also induce relaxation and positively influence both physical and mental reactions. (Alsaleh MA., 2019)

Discussions

The article "Dance therapy for individuals with Parkinson's disease: improving quality of life," written by Hackney M, Bennett C, discusses the impact of dance therapy on the health-related quality of life of individuals with Parkinson's disease. The authors conducted an integrative review of studies that investigated the effects of dance and movement therapy in patients with this condition. Several potential mechanisms through which dance can significantly improve the lives of patients were identified. These include improved motor function and participation, mental imagery and engagement in movement practice, the role of music in reducing stress and enhancing social relationships, as well as the physiological and psychopathological aspects of dance. However, the review also acknowledged that the available research on dance therapy for Parkinson's disease and its effects on health-related quality of life are still inconclusive. Many of the studies conducted were small-scale and lacked sufficient control groups, which limited the rigor of the conclusions. Further research with larger sample sizes and properly conducted randomized controlled trials is needed to draw solid conclusions regarding the effects of dance in individuals diagnosed with Parkinson's disease. In conclusion, their article suggests that dance has favorable potential, but at the same time highlights the need for more rigorous research to determine the specific benefits of dance therapy and to identify the ideal frequency, duration, and intensity of dance interventions for optimal outcomes.

Conclusions

To summarize, tango therapy has shown promising results as a comprehensive intervention for managing Parkinson's disease. By combining physical, cognitive, and music therapy, it has proven effective in reducing symptoms of depression, anxiety, and stress, while enhancing various aspects of physical function such as balance, coordination, posture, and mobility. Overall, tango therapy holds significant potential as an innovative and effective approach to improve the overall well-being of individuals with Parkinson's disease.

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