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THE ROLE OF DANCE MOVEMENT THERAPY IN THE TREATMENT OF DEPRESSION: AN OVERVIEW OF RECENT EVIDENCE

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ABSTRACT

Background: Depression is a widespread mental disorder affecting approximately 280 million people worldwide. While pharmacological treatments and cognitive-behavioral therapy (CBT) are considered first-line interventions, there has been growing interest in recent years in complementary, non-pharmacological therapies, such as Dance Movement Therapy (DMT), which offers a holistic, body-centered approach to improving mental health outcomes.
Aim: This review aims to evaluate the current evidence on the effectiveness of Dance Movement Therapy (DMT) in the treatment of depression. It seeks to understand the mechanisms through which DMT exerts its effects and to identify specific populations that may benefit most from this intervention.
Methods: A literature review was conducted using PubMed and Google Scholar databases, covering the years 2015 to 2025.
Results: DMT has demonstrated positive effects on depressive symptoms across various populations. Improvements were noted not only in mood but also in cognitive functioning, physical health, interpersonal relationships, and emotional regulation. While effect sizes varied, consistent within-group improvements and high adherence rates were observed.
Conclusion: DMT is a safe, engaging, and potentially effective adjunctive treatment for depression, especially when personalized and delivered by trained professionals. Its multicausal mechanism of action makes it a valuable tool in the integrative treatment of depressive disorders. Further high-quality, randomized studies are needed to establish standardized clinical guidelines.

KEYWORDS

Dance Movement Therapy, Dance, Depression, Mental Health, Depression Treatment, Psychotherapy

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1. Introduction and Purpose

Depression is the most prevalent mental disorder. Moreover, according to WHO reports, in 2020, it was the second most frequently diagnosed disease worldwide. It is projected that by 2030, it may become the most common one. (Zhang et al., 2024) It affects around 280 million people of different ages and from diverse social groups. It is also the fourth leading cause of death among people aged 15 - 29. (*Depressive Disorder (Depression)*, n.d.)

Pharmacological treatment and psychotherapy, particularly in the cognitive-behavioral approach, are considered the main methods of treatment, but they are not always effective. (Depression in Adults: Treatment and Management NICE Guideline, 2022) In about 30% of cases, we are dealing with treatment-resistant depression. (Mcintyre et al., n.d.) There are also patients who, after first-line treatment, still experience depressive symptoms at a lower intensity. This group is at significant risk of returning to a full-syndrome episode. (Dunlop, 2016)

Due to the mentioned epidemiological and therapeutic issues, there is a growing interest in a more holistic approach to treating depression. One option that may support this process is Dance Movement Therapy (DMT).

The purpose of this paper is to summarize the current knowledge on the effectiveness of DMT in depression treatment and to identify patient groups that may benefit the most from this type of intervention. We aim to present this method and its associated benefits in a clear way, for clinicians to be more likely to incorporate it into their practice.

2. Aim

This paper aims to review and summarize the existing evidence on the effectiveness of Dance Movement Therapy in the treatment of depression, as well as to identify groups of patients for whom this additional form of intervention could be particularly beneficial.

3. Methodology

A review of scientific articles published between 2015 and 2025 was conducted using PubMed and Google Scholar. Searched terms were:”dance movement therapy, ”“dance therapy, ”“depression, ” and”depression treatment”. Systematic reviews with meta-analyses and original research were preferred.

4. Background

4.1. Depression

Depression is an affective disorder characterized by a lowered mood, anhedonia (loss of interest in previously enjoyable activities), and reduced energy or excessive fatigue, lasting for at least two weeks. (Depression in Adults: Treatment and Management NICE Guideline, 2022) Depression manifests in diverse ways, and both the type and intensity of symptoms often vary among individuals. Clinical manifestations of this mental disorder include changes in appetite and sleep patterns, concentration and memory difficulties, feelings of excessive guilt or low self-worth, hopelessness about the future, and, in some cases, suicidal ideation. (*Podręcznik Interna - Medycyna Praktyczna: Zaburzenia Depresyjne*, n.d.)

The pathogenesis of depression is complex and includes genetic predisposition, neurobiological changes, life circumstances, and psychological processes. Many theories attempt to explain the pathophysiology of this disorder, but none of them fully account for its complexity. Some of the hypotheses are altered HPA axis activity, deficiency of monoamines, dysfunction of specific brain regions, neurotoxic and neurotrophic processes, reduced GABAergic activity, dysregulation of the glutamate system, and impaired circadian rhythms. (Jesulola et al., 2018)

An increase in mental health conditions was observed during and following the COVID-19 pandemic. One major contributor to this trend was restricted movement. While lockdowns played an important role in limiting virus transmission, they also resulted in decreased physical activity and the development of solitude. (McManus et al., 2022)

Given the significance of these factors in Dance Movement Therapy, we argue that further exploration of this approach is especially crucial in the post-pandemic period, which has shown us the importance of movement.

4.2. Treatment

In the current depression treatment guidelines developed by NICE in 2022, particular emphasis is placed on an individualized approach to the patient, adjusting the intensity of treatment to the severity of symptoms, and involving the patient in the therapeutic process. (Depression in Adults: Treatment and Management NICE Guideline, 2022)

For mild to moderate depression, first-line treatments include guided self-help, psychotherapy (especially in the cognitive-behavioral approach), and antidepressants from the group of selective serotonin reuptake inhibitors. (Depression in Adults: Treatment and Management NICE Guideline, 2022)

In a more severe depression, a combined therapy comprised of pharmacotherapy and psychotherapy is recommended, although monotherapy with either approach is not excluded. Simultaneous use of antidepressants and psychotherapy reduces the risk of relapse or recurrence of a depressive episode by 22%. (Dunlop, 2016) In treatment-resistant cases, when a rapid response is required, or when it is the patient’s preference due to a good response to this type of treatment in previous episodes, electroconvulsive therapy (ECT) may be used. (Depression in Adults: Treatment and Management NICE Guideline, 2022)

4.3. Dance Movement Therapy

According to the European Association of Dance Movement Therapy (EADMT), Dance Movement Therapy (DMT), also known as Dance Movement Psychotherapy (DMP), is based on the idea of the inseparability of our minds and bodies. (*Psychoterapia Tańcem i Ruchem | Instytut DMT - Szkolenia, Warsztaty*, n.d.; *What Is Dance Movement Therapy (DMT)? - EADMT*, n.d.) An individual’s internal state is closely linked to their movement and posture. DMT uses expressive motion, dance, but also small gestures and subtle shifts in posture to engage participants in a process leading to growth and integration. The therapeutic relationship

is regarded as a fundamental part of DMT, as it is in other forms of psychotherapy. (*What Is Dance Movement Therapy (DMT)? - EADMT*, n.d.) Through DMT, the patient is becoming more conscious of a connection between his thoughts, emotions, and body sensations. It all leads to reaching unconscious or difficult-to-verbalize feelings and bodily experiences, and gaining insight into behavioral patterns. (*Psychoterapia Tańcem i Ruchem | Instytut DMT - Szkolenia, Warsztaty*, n.d.) What differentiates DMT from other forms of action-oriented psychotherapy is its ability to engage the creative process, dance experiences, movement metaphor, body symbolism, as well as movement observation and analysis, allowing patients to explore their meaning. (*Psychoterapia Tańcem i Ruchem | Instytut DMT - Szkolenia, Warsztaty*, n.d.)

4.4. How does it work?

The mechanism of action of Dance Movement Therapy (DMT) is multicausal and includes biochemical, neurological, and psychosocial aspects.

Biochemically, DMT affects the body in a way comparable to moderate-intensity exercise. It increases nitric oxide levels in the serum, positively influencing the cardiovascular system, and regulates neurotransmitters such as serotonin and dopamine, which are associated with mood and cognitive functions. In the case of square dancing, it has been shown to increase estradiol levels, which have a positive impact on bone mineral density in perimenopausal women. Moreover, dance, despite a temporary rise in cortisol during activity, helps regulate its levels, thereby reducing long-term stress. Various forms of dance have also been linked to decreased glucose and triglyceride levels, as well as improvements in lipid profiles. For this reason, individuals with poorer baseline health may particularly benefit from interventions in the form of DMT. (Lopez-Nieves & Jakobsche, 2022)

Additionally, DMT may stimulate irisin (a myokine) and cytokines such as IL-6, which enhance the production of BDNF (Brain-Derived Neurotrophic Factor) in the hippocampus and promote antioxidant processes occurring in mitochondria, leading to increased neuroprotective effects. (Xiao et al., 2025)

The central nervous system plays a primary role in activities such as dancing due to its part in processing sensory stimuli, initiating movement, and coordinating responses to constantly changing external impulses. (Foster Vander Elst et al., 2023) The neurological action of DMT occurs through stimulation of brain regions responsible for motor planning, sensory integration, and emotional regulation, in cooperation with mirror neurons. (Simon et al., 2024; Wang, n.d.)

Mirror neurons, first discovered in monkeys, are active both during the execution of movement and while observing it, facilitating imitation and non-verbal communication. It is believed that thanks to these neurons, we can recognize the emotions and intentions of others solely by observing their movement. (Wang, n.d.)

These mechanisms contribute to improved neuromotor functions and form the therapeutic foundation of DMT. (Voleti, n.d.) Regular participation in DMT sessions can lead to enhanced neuroplasticity, such as increased white matter integrity, modulation of motor and cognitive networks, and improved functional connectivity. These effects may be particularly relevant for older adults and patients with neurodegenerative diseases, such as Parkinson's disease. (Simon et al., 2024)

DMT represents a unique form of therapy that combines movement, creativity, musicality, and social interaction. As a result, it engages multiple cognitive and emotional areas, which translates into improved emotional regulation and interpersonal communication. Furthermore, due to the necessity of responding to changing stimuli and incorporating them into one's movements, it enhances sensorimotor integration. This aligns with the theory that cognitive processes are deeply rooted in bodily interaction with the environment. (Hackney et al., 2024)

5. Results

5.1. Clinical Evidence: Efficacy of DMT in Treating Depression

A systematic review analyzing eight studies with a total of 351 participants evaluated the impact of DMT on depressive symptoms. An analysis focusing on three moderate-to-high-quality studies revealed that DMT combined with treatment-as-usual (TAU) significantly reduced depression compared to TAU alone. (Karkou et al., 2019) Although the broader research, including lower-quality studies, showed only moderate effect sizes, suggesting some bias due to study quality, all included studies reported decreases in depression following DMT. It is important to note that control group changes were not accounted for, leaving room for the possibility of spontaneous remission. (Karkou et al., 2019)

Another large-scale meta-analysis covering 41 trials supported these findings, reporting an overall medium effect size, albeit with high heterogeneity. DMT showed more consistent, though smaller, effects than general dance interventions, particularly in improving affect, quality of life, and cognitive functions in clinical populations. (Koch et al., 2019)

5.2. DMT in Psychiatric Outpatient Care

The study specifically examining psychiatric outpatients diagnosed with depression found that integrating DMT with TAU led to medium to large improvements across multiple outcome measures, especially in self-reported psychiatric symptoms and anxiety/depression. (Pylvänäinen et al., 2015) Although some changes in global distress and depression did not reach statistical significance, within-group improvements in the DMT cohort pointed to clinical relevance. Limitations such as lack of randomization, small sample sizes, and potential selection bias were noted, but the findings still support DMT as a promising, body-based adjunctive therapy.(Pylvänäinen et al., 2015)

Another study demonstrated a medium between-group effect size, suggesting that 66% of participants in the group receving DMT benefited compared to 50% in the group with TAU alone. Participants with more severe symptoms at baseline and higher motivation for

Self-exploration through movement showed the greatest improvements. (Hyvönen et al., 2020) These improvements extended beyond depression and included reductions in psychological distress and somatic symptoms. (Hyvönen et al., 2020)

5.4. Trauma-Affected Populations and Migrants

In one of the systematic reviews included in this study, where 15 articles were analyzed, DMT appeared to be a promising tool in the treatment of trauma. The main factors contributing to its effectiveness were the therapy's impact on the body, relaxation, stress reduction, and interpersonal connections. Moreover, improvements in motor functions, affect, and the mobilization of individual resources were observed only in the DMT groups. These effects were not noted in groups where dance was used merely as a form of therapy without a structured therapeutic framework. (Tomaszewski et al., 2023)

A particularly significant group in which a reduction in trauma symptoms was reported was migrants. In such cases, it is crucial to ensure that DMT is conducted by therapists trained in trauma treatment to avoid retraumatization and achieve the intended positive therapeutic outcomes. (Tomaszewski et al., 2023)

5.5. Older Adults, Mild Cognitive Impairment, and Dementia

DMT and dance as a form of physical activity, through their impact on neuroplasticity and structural changes in the brain, particularly in the hippocampus and prefrontal cortex, can be an important component in the treatment of depression in adults with mild cognitive impairment and dementia. In this group, the introduction of the intervention led to improvements in cognitive functions, memory, executive functions, attention, and language, as well as a reduction in symptoms of depression and anxiety. (Huang et al., 2023)

Stronger effects were observed in subgroups that danced in pairs, when the intervention lasted longer (over 12 weeks), and when participation was more frequent (three or more times per week). Due to the tendency of effects to diminish over time, regular practice is recommended. (Huang et al., 2023) Dance not only improves mental health but also reduces pain, increases muscle strength, and has a positive impact on interpersonal relationships. Thanks to these additional benefits, patients are more willing to participate in therapy, which leads to better long-term adherence. (Lu et al., 2024)

Dance-based interventions have high feasibility in older populations, with low dropout rates (<20%) and strong adherence, making them an adequate non-pharmacological strategy for both mental and physical well-being. (Huang et al., 2023)

In the older adult population, interventions involving dance have shown effects similar to those of other forms of physical activity. However, compared to a control group with no intervention, there was a significant reduction in depressive symptoms. This may suggest a substantial impact of social interaction with other participants on the symptoms. (Prudente et al., 2024)

Additionally, DMT has also been shown to have analgesic effects, which is another important factor supporting its implementation in the older adult population. A single 30-minute session increased pressure pain thresholds in healthy individuals, and the pain-relieving effect lasted for up to an hour. (Wu et al., 2024) These effects are thought to result from modulation of neurophysiological mechanisms such as endogenous opioid release, expression of

Brain-Derived Neurotrophic Factor (BDNF), synaptic plasticity in the anterior cingulate cortex, and activation of descending pain inhibition pathways. (Wu et al., 2024) Emotional regulation may also be enhanced via dopaminergic system activation and reduction of cortisol levels. (Wu et al., 2024)

5.6. Parkinson's Disease and Depression

Dance has shown particularly strong effects in reducing depression among individuals with Parkinson's Disease (PD). Some studies rank dance as the most effective non-pharmacological intervention, with better adherence than other forms of exercise. (Angelopoulou et al., 2023; Jang et al., n.d.)Dance may affect the anterior cingulate cortex and frontal brain regions, modulating serotonergic and dopaminergic systems involved in mood regulation. (dos Santos Duarte et al., 2023) Despite promising results, some studies found no statistically significant difference between dance and exercise interventions in improving depression, anxiety, or daily functioning in PD populations. (Fong Yan et al., 2024) However, the rhythmic and social nature of dance, combined with its enjoyable format, remains its strength, particularly for populations with motivation and activity challenges. (dos Santos Duarte et al., 2023)

5.7. Women in Midlife and Menopause

Another group in which dance as an intervention may bring significant benefits is women suffering from depression during the perimenopausal period. The intervention used in the study was square dancing, which originates from China and is widely known among the local community. It is particularly popular among the study group of middle-aged women. This may have positively influenced participation and engagement among the participants. (Gao et al., 2016)

In the research group, square dancing was shown to reduce symptoms of depression compared to the control group, supporting the conclusions of previous studies. The effectiveness of the intervention may be linked to the benefits of dance as a form of physical activity, such as overall improvement in physical fitness, better sleep quality, and increased levels of adrenaline and dopamine, but also to the presence of other participants, which could reduce feelings of loneliness. (Gao et al., 2016)

5.8. Personality Disorders

Yet another group of patients could benefit from DMT. The individuals with Borderline Personality Disorder (BPD) frequently struggle with emotional instability, and physical activities like DMT have been used to support emotional regulation. Movement-based interventions provide tools for mood stabilization and psychological integration, making DMT a promising adjunct in managing BPD symptoms. (Petersen et al., 2025) It is especially valid within this group due to reduced life expectancy in patients with BPD, mainly because of suicides and cardiovascular issues. (Petersen et al., 2025)

6. Discussion

Despite numerous pieces of evidence supporting the effectiveness of DMT in the treatment of depression, there are certain limitations. Below, we would like to discuss in more detail those we consider particularly important.

An important aspect of using DMT in clinical practice is the attitude of therapists toward this form of treatment. The more positive the attitude, the greater the likelihood of implementing DMT in clinical settings (especially when this method is regarded as equally promising as other forms of psychotherapy, such as cognitive-behavioral therapy). (Weitz & Opre, 2022) Some crucial factors were therapists' personal experiences, their openness to new therapeutic approaches, and somatic therapies. (Weitz & Opre, 2022) For this reason, the education of professionals is just as important as further research on DMT.

Another limitation often encountered in research on DMT is the perception of dance as an activity primarily intended for women. This may discourage men from participating in sessions. (Dunphy et al., 2019) Addressing these stereotypes is particularly important to ensure that the application of DMT in clinical practice becomes more widespread and standardized.

7. Conclusions

DMT is an effective tool that not only reduces depressive symptoms and improves affect but also demonstrates a range of additional effects. It has a positive impact on physical fitness, interpersonal relationships, cognitive functions, emotional regulation, and pain management.

Its effectiveness has been observed across diverse patient groups, including older adults, individuals with neurodegenerative disorders, women in the menopausal period, patients with personality disorders, and those who have experienced trauma.

Due to its multicausal mechanism of action, DMT has potential in the treatment of various conditions with different underlying causes. For the intervention to be effective, participant engagement, preferably long-term, and therapist openness to body-centered therapies are essential.

Despite the limited number of studies conducted on large and diverse populations, DMT may serve as an important complement to standard depression treatment. Given the lack of known side effects, the safety of the intervention, and its numerous non-psychological benefits, incorporating DMT into clinical practice may significantly improve therapy outcomes.

However, further research involving larger, randomized groups is necessary to establish clear recommendations and support their inclusion in clinical guidelines for depression treatment.

Disclosure

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In preparing this work, the authors used ChatGPT for the purpose of improving language, grammar, and text formatting. After using this tool, the authors reviewed and edited the text as needed and accept full responsibility for the substantive content of the publication.

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