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Original article

DANCE MOVEMENT THERAPY INFLUENCE THE QUALITY OF LIFE AND HAS BEHAVIORAL IMPROVEMENTS IN DEMENTIA PATIENTS

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Abstract

Objective. Dementia is a progressive, neurodegenerative disease, which produces a gradual alteration in both intellectual and emotional systems, starting from the tendency to lose recent memory, to total immobility, in the later stages. Over time, dementia brings the human body into total deterioration: cognitive, behavioral and functional. Our aim was to demonstrate the beneficial outcomes of the dance movement therapy in dementia patients for cognitive and emotional states.

Methods. Our method consisted in assessing 4 sessions of dance movement therapy every week for 6 months. Patients with dementia were initially reluctant to this new non-drug therapy, but after the initial sessions, the group of 7 patients became uniform. We performed the Philadelphia Geriatric Center Morale Scale, The Geriatric Depression Scale (GDS), Abbreviated Mental Test, Quality of life (QOL) and Bristol Activities of Daily Living Scale.

Results. Improvements have shown after the six months of dance movement therapy, mostly in the quality of life, emotional state and behavioral areas. The patients became more eager to come to sessions and their mood have changed, according to their caregivers.

Conclusions. Based on the results obtained after performing the 6 months dance movement therapy in dementia patient, we can conclude that the application of physical-cognitive therapy in older adults with dementia, is prone to generate important beneficial clinical changes, therefore, it can be acknowledged as a non-pharmacological tool that has effects potential in the short term.

Key words: dementia, dance-movement therapy, cognition, behavior.

Introduction

Dementia represents a neurodegenerative chronic disorder that affects several cognitive properties, such as memory, language, perceptual skills, attention, constructive skills, guidance, problem solvingand functional skills, causing a functional disability and behavior and emotional disorders linked with anxiety, tension, irritability, apathy, sadness,energy loss, and social isolation.

The cognitive impairment that is encountered in the primary stages of thedementia is the progressive deterioration of memory, principally the ability to learnand to recall new information, which is more commonly known as short-term amnesia.

In addition, patients with dementia, not only, have been reported to have cognitive impairments, but also deterioration in the components of motor, functional,agility, balance, flexibility, strength, aerobic endurance and motor coordination.

Various studies have reported a connection between cognitive functions and thegait, balance, falls and fear of falling. Eggermont et alrelated that the elderlyin the mild phase of dementia, have impaired balance and functional mobility,highlighting that individuals with dementia tend to experience loss in processingsensory information and deficiencies of executive functions, lately affectingdisturbances of balance and increase in the risk of falls. Also, the falls occurring in elders consist of the most important geriatric syndromes because of the implications and outcomes of thehigh morbidity and mortality that imply the falls in elders.

Another important characteristic of dementia is the appearance of behavioral changes in people who suffer from it also called symptomsneuropsychiatric disorders such as depression, anxiety and agitation, findings that can be recognizedas the disease progresses.

The dementia's progress consists of 3 stages. During the first stage, corresponding to the mild phaseor also called early stage, the person is still able to develop in an independent way, however, the early stage begins insidiously, with episodic memory loss,difficulties in learning and retaining new information, and in turn, the memory of remote events is usually conserved and sometimes enhanced.

The most characteristic aspect of the mild

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stage is therecent episodic memory loss, attention-concentration, semantic memory, learningprocedural and executive or judgment capacity. In turn, family concern beginsby observing that the patient changes his social and professional behavior, and in the face of persistencefrom these problems, the suspicion of a possible disease begins leading to themrelatives to go to the specialist. That is why, the detection of dementia in early stageshas become one of the main focuses of neurodegenerative disease research.

The second stage or also named the moderate stage, is generally considered thelonger and may last many years. During this process the aphasia begin to appear, which is notorious for the defects that occur in facial expression, characteristic of the disease that represents a disorder of the language that is characterized byinability or difficulty to recognize or remember the names of things, andespecially paraphrases, whether phonemic or semantic.

In the final stage or also called severe stage, people lose the capacityto respond to their environment, to carry on a conversation and eventually, to control their movements. At this stage, patients can still speak through words or phrases, but the communication is becomes difficult. Signs of subcortical deterioration are also commonly seen as alterations of thegait, which usually manifests itself insidiously, causing alterations in muscle tone.

The conceptual definition for music therapy according to the World Federation (World Federation forMusic Therapy, WFMT) Music therapy is defined as "The use of music and / or theirsmusical elements (sound, rhythm, melody and harmony) by a music therapist with a patient orgroup, in a process designed to promote and facilitate communication, interaction, thelearning, mobility, expression, organization and other significant therapeutic goalsto work on the physical, emotional, social and cognitive needs of the people ".

The application of music therapy in groups favors patients to be able to generatebetter social relationships, as well as improving mood, either in mild to moderate type of dementia.

Methods

The purpose of the present study was to describe the changes in depressive symptoms and quality of life, in subjects with dementia. A group of seven subjects took part in the study, every one of them was evaluated with different scales, during the dance therapy for six months. We performed the Philadelphia Geriatric Center Morale Scale (PGC-MS), The Geriatric Depression Scale (GDS), Abbreviated Mental Test (AMT), Quality of life (QOL) and Bristol Activities of Daily Living Scale (BA-DLS).

Inclusion criteria: Subjects with the age over 60 years with moderate stage dementia medical diagnosed by neurologist doctors, in specific treatment. The patients' most obvious condition is episodic recent memory loss, retaining the ability to discern and choose to participate in the study. Subjects that have independence in carrying out the basic activities of daily life and finally any patient and / or representative who has signed the informed consent, thus authorizing his / herparticipation in kinetic sessions.

Exclusion criteria: Study participants who present other psychiatric pathologies, such as epilepsy,interictal psychosis, schizophrenia, delirium, hallucinations, and who also suffer from hearing deficitssevere visual or motor impairment, vestibular dysfunction or subjects in the situation of falling down, not being able to follow basic instructions or not being able to have performed test or not being able to respond to questions from questionnaires will be excluded from the study.

Aerobic physical exercise

The mechanisms responsible for the cognitive benefits observedafter exercise they are still unclear; however, research suggests that suchinterventions can facilitate brain health, especially neuroplasticity, which in turnit improves cognitive function. It is established that aerobic training increasescerebral blood flow and size of the anterior hippocampus, leading to improvements incognitive functioning and spatial memory, respectively. Aerobic Exercise Method:

The initial prescription of the aerobic exercise, consisted of walking of 15 to 20 minutes in
inside the location, with a minimum of 3 times and a maximum of 5 times a week with a mild to moderate intensity. In addition, after a week, our aim was to incorporate a multimodal exercise protocol, which includes physical componentssuch as flexibility, strength and balance, which show greater effectiveness in the treatment of dementia,in combination with aerobic exercise.

Table 1. Protocol of multimodal exercises:		
General movements	3minutes	Hand touching nose, knee, shoulder

Warming Mobility upper limbs	3 minutes	Flexion, extension androtation of joints, pressing or rolling a ball
Lower limb mobility	5 minutes	Ankle rotation, knee flexion
Strength exercises	5 minutes	Push, pull, lift, with / without implements or with another patient from the group
Fine motor skills	5 minutes	Finger mobility, making paper balls, playing withright limb / left limb
Lower extremity exercises	15 minutes	Hold a ball between the legs,walk in different directions (with or without obstacles) or raise one leg
Relaxation	5 minutes	Breathing exercises and stretching

Music therapy

The application time of the intervention will be 20 minutes. The intervention will be divided into 2 phases, the first, it consists of 10 min of passive music, where the patients will be seated around a circle and they should only listen to the songs that will be put on a speaker and at the end of the phase, they will be asked to comment if they have any type of memory or emotion with the topics heard.

The second phase consists of 10 minutes of active music, where they will be encouraged to sing and dance. The active mode will be done in a group way to generate better relationshipssocial, as well as improvements in the mood of patients. The music to use will be classical, jazz and dance music.

In turn, and as the sessions will progress, the capacity and mental state of the patient will be evaluatedof each patient versus exercise, until the last evaluation after the 6 months of dance-movement therapy.

Results

The aim of this study was to verify the effect of dance therapy on both cognitive and functional stages, depression and quality of life on people diagnosed with dementia in moderate stages.

Depressive symptomatology was evaluated through the Geriatric Depression Scalewhere positive post-intervention changes are reported, showing a decreasein depressive symptoms. These changes are related to this non-pharmacological therapy, that is, the application of music therapy and aerobic exercise.

The changes were feasible because of applying music therapy in active mode ofgroup mode has shown improvements in social relationships and patient's mood, in turn, such changes are due to the applicability time of such interventionour study, a finding consistent with that reported by the study Guetin et. al, which applied 20
minutes of personalized music therapy significantly reduce anxiety scores andseverity of depression.Additionally, music therapy has reported a decrease in incidenceneuropsychiatric symptoms, additionally associated with the application of aerobic exercise.

Patients in the study group presented symptoms prior to the 6 months of treatment that are part of the depression register, with the appearance of anhedonia and lack of interest for any activity that is part of the routine or not. They also presented feelings of loneliness, having a colder relationship with friends and family lately. Many times, they reported feeling sad, bored, scared, irritable and useless to society and family, without having a desire for life, not being satisfied with their life and losing their energy and hope. Patients' memory was generally good, with the majority scoring 7-8 on the Abbreviated Mental Test (AMT). On the other hand, all the patients declared themselves unhappy with the quality of their life and health.

Table 2. Results before the 6 months dance-movement therapy.

	Philadelphia Geriatric Center Morale Scale	The Geriatric Depression Scale	Abbreviated Mental Test	THE WORLD HEALTH ORGANIZATION QUALITY OF LIFE (WHOQOL) -BREF	Bristol Activities of Daily Living Scale
Patient 1	13	11	8	70	37
Patient 2	10	11	8	72	35
Patient 3	11	12	7	68	33
Patient 4	9	11	8	60	34
Patient 5	14	14	7	75	39

Patient 6	11	12	7	66	31
Patient 7	12	13	8	73	30

Table 3. Results after the 6 months dance-movement therapy.

	Philadelphia Geriatric Center Morale Scale	The Geriatric Depression Scale	Abbreviated Mental Test	The World Health Organization Quality Of Life (WHOQOL) - BREF	Bristol Activities of Daily Living Scale
Patient 1	9	8	9	74	35
Patient 2	7	6	8	76	33
Patient 3	8	7	8	73	31
Patient 4	7	8	9	65	32
Patient 5	10	10	7	79	34
Patient 6	8	9	8	71	30
Patient 7	9	10	9	77	31

Patients in the study group presented after 6 months of dance-movement therapy improvements regarding the specific symptoms of depression, with increasing interest in activities that are part of the routine or not. They also showed a decrease in feelings of loneliness, having a better relationship with friends and family lately. Many times, they reported that they discovered new activities and centers of interest and rediscovered passions and hobbies that made them no longer feel sad and bored.

Also, feelings of fear and irritability have decreased, as self-confidence has increased. Patients started to carry out new activities related to the management of the house, the hygiene of the house and the maintenance of the cleaning, which made them useful for the society and the family.

During the 6 months the patients have increased their life span, starting to practice more outdoor activities. Patients have increased satisfaction over their lives and have increased energy and hope. Patient memory made small progress in 6 of 7 patients on the Abbreviated Mental Test (AMT). On the other hand, all patients were more satisfied with the quality of their life.

Discussions

The effects of physical exercise on dementia patients were developed by Palleschi et al. who showed that patients who were in mild or moderate phase of thedisease improved their attention, their verbal and cognitive abilities after participating in a3 months training, in addition, the benefits are presented in both sexes and the effect can be manifested in greater quantity, where the volume or intensity of thephysical exercise. In turn, to achieve such benefits, patients must performaerobic exercise plus mild to moderate multi-modal exercises for a minimum30 minutes.

Also, dance therapy is certified as a psychotherapeutic tool that uses the movement to increase the cognitive, physical, and social emotional integration of the individual, improves mood and self-esteem, allows emotions to emerge.

Conclusions

In addition, we conclude that music along with dancing, helps to improve depression and prevent itpsychiatric symptoms among dementia patients. Another benefit is that the patients may experience mutual support during music therapy sessionsand increase confidence, reduce anxiety and experience problems and problemsemotional stressors, improving depressive moods. The improvements ofthe patient's relationship with the environment has been shown to reduce aggressive behaviormanifested by patients and increases their cognitive status.

The results found show a significant improvement in dementia patients implicated in thestudy, after the application of a physical-cognitive therapy. Therefore, future research needs longer periods of intervention and a larger sample to accurately quantify whether statistically significant changes in the medium and long term, maintained over time, can occur.

References

Prince MJ., 2015, World Alzheimer Report 2015: the global impact of dementia: an analysis of prevalence, incidence, cost and trends. Alzheimers Disease International.ADI, 2015

Gallaway PJ, Miyake H, Buchowski MS, et al., 2017, Physical Activity: A Viable Way to Reduce the Risks of Mild Cognitive Impairment, Alzheimer's Disease, and Vascular Dementia in Older Adults. Brain Sci2017;7:22. doi:10.3390/brainsci7020022 pmid:28230730

Azermai, M., Petrovic, M., Elseviers, M.M., Bourgeois, J., Van Bortel, L.M., Vander Stichele, R.H., 2012. Systematic appraisal of dementia guidelines for the management of behavioural and psychological symptoms. Ageing Research Reviews 11 (1), 78–86.

Ferri CP, Prince M, Brayne C, Brodaty H, Fratiglioni L, Ganguli M, Hall K, Hasegawa K, Hendrie H, Huang Y, Jorm A, Mathers C, Menezes PR, Rimmer E, Scazufca M; Alzheimer's Disease International: Global prevalence of dementia: a Delphi consensus study. Lancet 2005;
366: 2112–2117.

Bierma n EJ, Comijs HC, Jonker C, Beekman AT: Symptoms of anxiety and depression in the course of cognitive decline. Dement Geriatr Cogn Disord 2007;
24: 213–219.

Starr JM, Lonie J: Relationship between behavioural and psychological symptoms of dementia and cognition in Alzheimer's disease. Dement Geriatr Cogn Disord 2007;
24:
343–347.

Ferri CP, Prince M, Brayne C, Brodaty H, Fratiglioni L, Ganguli M, Hall K, Hasegawa K, Hendrie H, Huang Y, Jorm A, Mathers C, Menezes PR, Rimmer E, Scazufca M; Alzheimer's Disease International: Global prevalence of dementia: a Delphi consensus study. Lancet 2005;
366: 2112–2117.

2 Bierma n EJ, Comijs HC, Jonker C, Beekman AT: Symptoms of anxiety and depression in the course of cognitive decline. Dement Geriatr Cogn Disord 2007;
24: 213–219.

3 Starr JM, Lonie J: Relationship between behavioural and psychological symptoms of dementia and cognition in Alzheimer's disease. Dement Geriatr Cogn Disord 2007;
24:
343–347.

1 Ferri CP, Prince M, Brayne C, Brodaty H, Fratiglioni L, Ganguli M, Hall K, Hasegawa K, Hendrie H, Huang Y, Jorm A, Mathers C, Menezes PR, Rimmer E, Scazufca M; Alzheimer's Disease International: Global prevalence of dementia: a Delphi consensus study. Lancet 2005;
366: 2112–2117.

2 Bierma n EJ, Comijs HC, Jonker C, Beekman AT: Symptoms of anxiety and depression in the course of cognitive decline. Dement Geriatr Cogn Disord 2007;
24: 213–219.

3 Starr JM, Lonie J: Relationship between behavioural and psychological symptoms of dementia and cognition in Alzheimer's disease. Dement Geriatr Cogn Disord 2007;
24:
343–347.

1 Ferri CP, Prince M, Brayne C, Brodaty H, Fratiglioni L, Ganguli M, Hall K, Hasegawa K, Hendrie H, Huang Y, Jorm A, Mathers C, Menezes PR, Rimmer E, Scazufca M; Alzheimer's Disease International: Global prevalence of dementia: a Delphi consensus study. Lancet 2005;
366: 2112–2117.

2 Bierma n EJ, Comijs HC, Jonker C, Beekman AT: Symptoms of anxiety and depression in the course of cognitive decline. Dement Geriatr Cogn Disord 2007;
24: 213–219.

3 Starr JM, Lonie J: Relationship between behavioural and psychological symptoms of dementia and cognition in Alzheimer's disease. Dement Geriatr Cogn Disord 2007;
24:
343–347.

Cuddy L.L., Duffin J et al., 2005, Music Memory and Alzheimer's Disease : Is music recognition spared in Dementia and How can it be assessed. Med. Hypothesis 2005, 64, 229-235

Narme P., Clement S. et al, 2014, Efficacy of Music Intervention in Dementia, evidence from a randomized control study. Journal Alzheimer's Disease 2014, 38, 359-369

Suzuki M, Kanamori M et al, 2004, Behavioral and Endocrinological evaluation of music therapy for elderly patients with Dementia. 2004, Nursing Health Science 6. 11-18

Docu Axelerad A, Docu Axelerad D, Docu Axelerad S, Stroe A Z, 2019, Walking in Parkinson's disease. Ovidius University Annals, Series Physical Education and Sport / SCIENCE, MOVEMENT AND HEALTH Vol. XIX, ISSUE 2, 2019; 19 (2 supplement): 350 – 354.

Forbes D, Forbes SC, Blake CM, Thiessen EJ, Forbes S., 2015, Exercise programs for people with dementia. Cochrane Database Syst Rev2015;(4):CD006489.pmid:25874613

Stroe A Z, Docu Axelerad S, Docu Axelerad D, Docu Axelerad A, 2019, Exercises in

Parkinson's disease. Ovidius University Annals, Series Physical Education and Sport / Science, Movement and Health, Vol. XIX, ISSUE 2 Supplement, 2019; 19 (2 supplement): 344 – 349.

Groot C, Hooghiemstra AM, Raijmakers PG, et al., 2016, The effect of physical activity on cognitive function in patients with dementia: A meta-analysis of randomized control trials. Ageing Res Rev2016;25:13-23. doi:10.1016/j.arr.2015.11.005 pmid:26607411

Docu Axelerad A, Stroe A Z, Docu Axelerad S, Docu Axelerad D, 2019, Divinity in dementia. Proceedings DIALOGO (The 10th Scholarly Meeting on the Dialogue between Science and Theology), 2019; vol. 6,issue 1,pp. 187 – 194. DOI: 10.18638/dialogo.2019.6.1.18, ISBN: 978-80-973541-1-4 (html), 978-80-973541-0-7(pdf), ISSN: 2393-1744.

Atherton N, Bridle C, Brown D, et al., 2016, Dementia and Physical Activity (DAPA) - an exercise intervention to improve cognition in people with mild to moderate dementia: study protocol for a randomized controlled trial. Trials2016;17:165. doi:10.1186/s13063-016-1288-2 pmid:27015659

Docu Axelerad A, Stroe A Z, Docu Axelerad S, 2019, Combating Depression in Parkinson's Disease with Melotherapy. Proceedings DIALOGO (The 10th Scholarly Meeting on the Dialogue between Science and Theology), 2019; vol. 6,issue 1,pp. 195 - 202, DOI: 10.18638/dialogo.2019.6.1.19, ISBN: 978-80-973541-1-4 (html), 978-80-973541-0-7(pdf), ISSN: 2393-1744

Burback D, Molnar F J, St John P., 1999, Key methodological features of randomized controlled trials of Alzheimer's disease therapy. Dement Geriatr Cogn Disord, 1999; 10 534-540

Docu Axelerad A, Stroe A Z, Docu Axelerad S, 2019, How religiosity affects Parkinson's disease symptoms. Proceedings DIALOGO (The 10th Scholarly Meeting on the Dialogue between Science and Theology), 2019; vol. 6,issue 1,pp. 203 - 211, DOI: 10.18638/dialogo.2019.6.1.20, ISBN: 978-80-973541-1-4 (html), 978-80-973541-0-7(pdf), ISSN: 2393-1744.

Heyn P, Abreu B C, Ottenbacher K J., 2004, The effects of exercise training on elderly persons with cognitive impairment and dementia: a meta-analysis. Arch Phys Med Rehabil, 2004; 85 1694-1704

Dantes E, Docu Axelerad S, Stroe A Z, Docu Axelerad D, Docu Axelerad A, 2020, The rehabilitation of hemiparesis after stroke. Ovidius University Annals, Series Physical Education and Sport / Science, Movement and Health, Vol. XX, ISSUE 1, 2020; 20 (1): 5 – 9.

Larson E B, Wang L, Bowen J D., 2006, Exercise is associated with reduced risk for incident dementia among persons 65 years of age and older. Ann Intern Med, 2006; 144 73-81

Docu Axelerad A, Jurja S, Stroe A Z, Docu Axelerad S, Docu Axelerad D, 2020, The role of physical exercise in multiple sclerosis. Ovidius University Annals, Series Physical Education and Sport / Science, Movement and Health, Vol. XX, ISSUE 1, 2020; 20 (1): 10 – 15.

Guétin S., Portet F., Picot M. C., Pommié C., Messaoudi M. et al, 2009, Effect of music therapy on anxiety and depression in patients with alzheimer's type dementia: Randomised, controlled study. Dementia and Geriatric Cognitive Disorders, 2009; 28(1), 36–46. doi:10.1159/000229024

Docu Axelerad D, Docu Axelerad S, Dantes E, Stroe A Z, Docu Axelerad A, 2020, Mixed dementia and physical exercise. Ovidius University Annals, Series Physical Education and Sport / Science, Movement and Health, Vol. XX, ISSUE 1, 2020; 20 (1): 16 – 21.

Palleschi L, Vetta F, de Gennaro E, Idone G, Sottosanti G, Gianni W, et al, 1996, Effect of aerobic training on the cognitive performance of elderly patients with senile dementia of Alzheimer type. Arch Gerontol Geriatr. 1996; 22(1):47–50.

Stroe A Z, Docu Axelerad S, Docu Axelerad D, Docu Axelerad A, 2020, Neurorehabilitation through exercise in parkinson's disease patients, Ovidius University Annals, Series Physical Education and Sport /Science, Movement and Health, Vol. XX, ISSUE 1, 2020; 20 (1): 67 – 71.

Docu-Axelerad A, Stroe ZA, Docu-Axelerad D, Docu-Axelerad S., 2020, Multiple sclerosis and yoga. Arch Balk Med Union. 2020;55(1):154-158. https://doi.org/10.31688/ABMU.2020.55.1.19