



REVIEW ARTICLE



MELOTHERAPY- A COMPLEMENTARY APPROACH IN THE SYMPTOMATOLOGY OF MULTIPLE SCLEROSIS PATIENTS

Zorina Alina STROE¹, Silviu DOCU-AXELERAD², Daniel DOCU-AXELERAD³

¹Neurology Department, Faculty of Medicine, 'Ovidius' University, 1 Aleea Universitatii, Campus, Corp B, Constanta, Romania

²Vasile Goldis University, Arad, Romania

³Ovidius University, Faculty of Physical Education and Sport, Constanta, Romania

ABSTRACT

Aim. The aim of this study is to determine the performance of patients with multiple sclerosis who take music therapy treatment for 6 months, from a physical and mental point of view. The purpose of this study is to identify the possible physical, but also psychological improvements that music therapy, mainly classical music, can bring in the life of patients with multiple sclerosis.

Methods. A lot of 6 patients with relapsing-remitting multiple sclerosis was divided into two groups, one control and the other practicing music therapy for 6 months. The two groups of patients were designated to not differ significantly with respect to age, being between 20 and 40 years. Questionnaires regarding the mental and emotional states of the patients were performed at the beginning and at the end of the 6 months period and the result were compared.

Results. The results of the questionnaires performed before and after the melotherapy session period show a beneficial increase in the clinical symptoms of the patients and a much more improvement in the emotional and mental states of the patients. An important improvement was observed in the symptomatology of depression and anxiety in comparison to the multiple sclerosis patients that were using music therapy.

Conclusions. The findings of the effects of music therapy amongst the multiple sclerosis patients make important objectives for the multiple sclerosis patients or patients with chronic diseases to be completed. The coping mechanisms and the quality of life assured for the patients and their caregivers a healthy life from the mental point of view. For each patient diagnosed with multiple sclerosis, the coping mechanisms with symptoms are still insufficiently improved, and therefore the frequency of the depression and anxiety symptoms among the multiple sclerosis patients are prevalent. Melotherapy represents a useful tool for this matter, taking into consideration it's feasibility and applicability for the era that we live in.

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KEYWORDS

Anxiety, depression, quality of life, melotherapy, multiple sclerosis.

INTRODUCTION

Multiple sclerosis is a neurological disease that has poly systemic impairment, congruent with the following symptoms, depending on the location of the neuronal demyelination: mobility, hand functioning, vision, fatigue, cognition, bowel or

bladder function, sensory, spasticity, pain, depression, and tremor.

Multiple sclerosis is the most common neurological condition of the young adult, which causes major disabilities. Multiple sclerosis is a chronic disease of the central nervous system, characterized by

Contact: Zorina Alina STROE, Neurology Department, Faculty of Medicine, 'Ovidius' University, 1 Aleea Universitatii, Campus, Corp B, Constanta, Romania

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episodes of inflammation and focal demyelination with multiple locations disseminated over time and by a process of axonal degeneration.

Multiple sclerosis is a disease that begins in the young adult (20-40 years), which implies a major impact on life, family, social situation and also has a major impact on the psychological considerations that are formed and defined at these ages^{1,2,3}.

MATERIALS AND METHODS

The lot of 6 patients with relapsing-remitting multiple sclerosis was divided into two groups, one control and the other practicing music therapy for 6 months. In addition, the patients were separately diagnosed by a neurologist and they met the standard criteria to be incorporated into the relapsing-remitting form of multiple sclerosis. The two groups of patients were designated to not differ significantly with respect to age, being between 20 and 40 years. The patients signed the informed consent regarding to the study.

The recommendations and therapeutic guidance were made according to the situation and the particularities from the point of view of the musical preferences of each patient, but following a predominantly instrumental line of classical music, jazz and even religious music. Each patient was offered a collection of CDs with music suitable for each of the chosen range and not only, with recommendations to listen to and use at least half an hour three times a day, preferably in the morning jazz music, at lunch classical music and before sleep, religious music, but with the possibility to choose according to the preferences of each patient.

For every patient from the both groups the Expanded Disability Status Scale score, was calculated before the 6 months and in every month of the period, this score being a tool that quantifies disability in multiple sclerosis. Furthermore, the Hamilton Anxiety and Depression scales were performed during the 6 months period. In addition, for every patient belonging to the groups, the Modified Fatigue Impact Scale was calculated, before, during and after the 6 months. Also, we executed a test before, during and after the 6 months, regarding to quantifying the undesirable perceptions and feelings that multiple sclerosis patients commonly experience. Concerning the physical form, regarding the sphincter activity of the patients that is often achieved in multiple sclerosis, we performed the following tests for the patients: The Bladder Control Scale and The Bowel Control Scale, during the period of 6 months. Respecting the visual impairments, we performed tests of Impact of Visual Impairment Scale in the form of questionnaires during the 6 months. Perceived Deficits Questionnaire that followed the subjective answers, was executed in every month during the 6 months period. Additionally, the

Mental Health Inventory was performed with the purpose of determining how the patients felt⁴.

RESULTS

The first patient from the music therapy group, C.T., 35 years, female, with recurrent-remissive multiple sclerosis had two typical attacks for multiple sclerosis in the central nervous system with objective evidence at the clinical examination for both lesions and was diagnosed 7 years ago. At the beginning of the 6 months, the patient had paresthesia to touch and decreased pin sensation and mild vibratory sense loss in the left side. The patient presented with sight problems. The bladder problems were also positive. She had difficulties in maintaining clarity in her mind. Expanded Disability Status Scale score was 2 points. The patient gained 35 points at the Hamilton Anxiety Rating Scale test, categorizing her for moderate anxiety. The patient obtained 10 points at the Hamilton Depression Rating Scale test, classifying her for mild depression. Her result on Fatigue Impact Scale test was 53 points, having correspondent a moderate level of fatigue, the patient was feeling less alert, forgetful, clumsy, and unmotivated to perform various tasks, with a minor capacity of thinking clearly. The patient's result of the Bladder Control Scale test was 3 points, meaning a level of mild dysfunctions of the bladder. The result of the Bowel Control Scale test was 2 points, meaning a mild level of dysfunctions of the bowel. The result that the patient obtained to the Impact of Visual Impairment Scale test was 3 points, with a mild impact of the disease on the sight. At the Perceived Deficits Questionnaire test, the patient obtained 45 points at the meaning a moderate frequency of problems with memory, attention, or concentration. The patient obtained a 59 points result at the Mental Health Inventory scale, meaning a slight to moderate affectation of her mental vitality and the way in which the patient evaluated her mental activity. Related to the social support, the patient obtained 72 points at the Mos Modified Social Support Survey, benefiting from social support on the physical, mental and emotional levels most of the time. The patient practiced for 6 months the program of music therapy, preferring to listen to jazz type of music almost every day. After the 6 months, the patient's result on the Expanded Disability Status Scale score was still 3 points and the result that patient obtained at the Hamilton Anxiety Rating Scale test was 25 points, with the improvement of intellectual segment of the questionnaire: the anxious and fearful mood were improved, the difficulty in concentration was decreased, also the result at the somatic section of the test has improved, with the disappearance of the grinding of the teeth and finally, the patient has improved her initial

depressed mood that she had before the 6 months of music therapy. Related to the result of Hamilton Depression Rating Scale test after the 6 months of music therapy, the patient improved her score with the increase of the interest in activities and hobbies and with the decrease of the psychic type of anxiety. After the 6 months, her result on Fatigue Impact Scale test, having decreased by the significant improvement of the motivation, concentration and physical endurance. The patient's result of the Bladder Control Scale test and the result of the Bowel Control Scale test was after the 6 months of music therapy are the same. The result that the patient obtained to the Impact of Visual Impairment Scale test was unchanged after the music therapy. The patient obtained 39 points at the Perceived Deficits Questionnaire test, with the improvement of the concentration and the memory. The patient obtained a 51 points result at the Mental Health Inventory scale, observing improvements in the following chapters: because of to the decrease of her depression level, she noticed that she felt more energetic and appreciated by the family, also psychically being calmer, more aware of her emotions, so her days became more interesting. Regarding to the social support, the patient obtained the same 72 points.

After another period of 6 months, the patient reported that she did follow the music therapy and her symptoms of fatigue, anxiety and depression, sustaining that she felt a significant change in her life, especially in the quality of her life. The scores that were changed belonged to the Perceived Deficits Questionnaire, with the improvement of short memory and decision making; also the scores of the Mental Health Inventory scale, Fatigue scale score, Hamilton Depression scale score and Hamilton Anxiety scale score, were improved, especially by the normalization of the sleep, now the insomnia problems disappearing.

The second patient belonging to the music therapy group, D.T., 34 years old, female, with recurrent-remissive multiple sclerosis had three typical attacks for multiple sclerosis in the central nervous system with objective evidence at the clinical examination for all lesions and was diagnosed 5 years ago. At the beginning of the 6 months, the patient had tremor, trouble with the coordination and paresthesia in both arms. The Expanded Disability Status Scale score was 2 points. The Hamilton Anxiety scale result was 20 points, the patient presenting tension with inability to relax with insomnia, with difficulty in concentration and poor memory and presenting dry mouth and pallor. And the score of the Hamilton Depression scale was 16 points, with the presence of pessimism and a depressed mood, feelings of guilt, insomnia, and slowness of thought and loss of insight. The Modified Fatigue Impact Scale result was 40 points

with the presence of the following: inability of thinking clearly, forgetfulness, being limited in the physical activities and organization and concentration. The Bladder Control Scale and The Bowel Control Scale showed mild problems. Also, the Impact of Visual Impairment Scale result was 4 points: being unable to read properly. The Perceived Deficits Questionnaire result was 50 points, showed changes in the capacity of the memory on short term, concentrating and decision making. The Mental Health Inventory was performed and showed the result of 42 points, with the following: depression, emotional instability and modifications of the behavior. The Mos Modified Social Support Survey was 80 points, revealing support from the family in most of the situations. The patient practiced for 6 months the program of music therapy, preferring to listen to classical type of music almost every day. After the 6 months, the patient's result on the Expanded Disability Status Scale score was the same. The Hamilton Anxiety Scale score was decreased with 5 points with the increasing of the capacity of memory and concentration and with the stage of insomnia that became from moderate to mild. And the Hamilton Depression Scale score was decreased with 2 points by the increase of interest of the patient for various activities. The Modified Fatigue Impact Scale result was decreased with 3 points by the ameliorated fatigue and the increased physical power. The Bladder Control Scale result and The Bowel Control Scale result remained the same after the 6 months. The Impact of Visual Impairment Scale result was unchanged. The Perceived Deficits Questionnaire result was decreased with 5 points because of the increase of self-awareness and the increase of emotional control. The Mental Health Inventory result that was performed after the 6 months therapy indicated an improvement of 5 points in the score because of the regression of the depression, anxiety and emotional problems. The patient continued to receive the same family support that was revealed in the Mos Modified Social Support Survey score that was the same after 6 months.

After another period of 6 months, the patient reported that she did follow the music therapy and she was interviewed again with all the questionnaires. The patient obtained a better result regarding to the Hamilton Scales of anxiety and depression; she reported that she engaged in more social activities and sport related activities using music and therefore, her fatigue decreased and also her deficits were perceived to be milder. Also, her mental health improved by the relating of the patient and by the result that she obtained at the Mental Health Inventory. Her symptoms of tiredness and insomnia were reduced and were the most significant improvements that she considered having after performing melotherapy for a year.

The third patient from the music therapy group, L.T., 38 years old, female, with recurrent-relapsing multiple sclerosis had four typical attacks for multiple sclerosis in the central nervous system with objective evidence at the clinical examination for all lesions and was diagnosed 9 years ago. At the beginning of the 6 months, the patient had tremor, trouble with the coordination, dysdiadochokinesia, stumbling gait, heat intolerance and paresthesia in both legs. The Expanded Disability Status Scale score was 3 points. The result of the Hamilton Anxiety scale was 25 points, the patient presenting fears of darkness, worries, tension with inability to relax, with difficulty in concentration and memory problems and presenting loss of interest. And the score of the Hamilton Depression scale was 14 points, with the presence of pessimism and a depressed mood, feelings of sadness, slowness of thought and loss of interest. The Modified Fatigue Impact Scale result was 46 points with the presence of the following: inability of thinking clearly, forgetfulness, being limited in the physical activities and organization and a decreased capacity of concentration. The Bladder Control Scale and The Bowel Control Scale showed mild problems. Also, the Impact of Visual Impairment Scale result was 3 points: being unable to read properly. The Perceived Deficits Questionnaire result was 55 points, showed changes in the capacity of the memory and remembering facts and actions, concentration capacity decreased and decision making. The Mental Health Inventory was performed and showed the result of 42 points, with the following: depression, nervousness, irritability, sadness and modifications of the behavior. The Mos Modified Social Support Survey was 85 points, revealing support from the family in all the situations. The patient practiced for 6 months the program of music therapy every day. After the 6 months, the patient's result on the Expanded Disability Status Scale score was the same. The Hamilton Anxiety Scale score was decreased with 3 points with the decrease of the worries and fears. And the Hamilton Depression Scale score was decreased with 1 point by the increase of interest of the patient for various activities. The Modified Fatigue Impact Scale result was decreased with 2 points by the ameliorated fatigue and forgetfulness. The Bladder Control Scale result and The Bowel Control Scale result remained the same after the 6 months. The Impact of Visual Impairment Scale result was unchanged. The Perceived Deficits Questionnaire result was decreased with 3 points because of the increase of self-awareness and the increase of emotional control. The Mental Health Inventory result that was performed after the 6 months therapy indicated an improvement of 4 points in the score because of the regression of the depression, anxiety and emotional problems. The

patient continued to receive the same family support that was revealed in the Mos Modified Social Support Survey score that was the same after 6 months.

The patient did not continue the music therapy after the six months.

The first patient from the control group, T.T., 34 years old, female, with recurrent-relapsing multiple sclerosis had two typical attacks for multiple sclerosis in the central nervous system with objective evidence at the clinical examination for both lesions and was diagnosed 7 years ago. At the beginning of the 6 months, the patient had paresthesia in both arms, tendency to fall and mild loss of the vibratory sense. The Expanded Disability Status Scale score was 3 points. The result of the Hamilton Anxiety scale was 20 points, the patient presenting. And the score of the Hamilton Depression scale was 14 points, with the presence of pessimism and a depressed mood, feelings of sadness, slowness of thought and loss of interest. The Modified Fatigue Impact Scale result was 46 points with the presence of the following: inability of thinking clearly, forgetfulness, being limited in the physical activities and organization and a decreased capacity of concentration. The Bladder Control Scale and The Bowel Control Scale showed mild problems. Also, the Impact of Visual Impairment Scale result was 3 points: being unable to read properly. The Perceived Deficits Questionnaire result was 55 points, showed changes in the capacity of the memory and remembering facts and actions, concentration capacity decreased and decision making. The Mental Health Inventory was performed and showed the result of 42 points, with the following: depression, nervousness, irritability, sadness and modifications of the behavior. The Mos Modified Social Support Survey was 85 points, revealing support from the family in all the situations.

The second patient from the control group, V.D., 33 years old, male, with recurrent-relapsing multiple sclerosis had two typical attacks for multiple sclerosis in the central nervous system with objective evidence at the clinical examination for both lesions and was diagnosed 2 years ago. At the beginning of the 6 months, the patient had paresthesia in both legs, tremor, tendency to fall and changes of behavior. The Expanded Disability Status Scale score was 2 points. The Hamilton Anxiety Scale result consisted in 20 points, with the presence of somatic and systemic responses to anxiety and mild insomnia. And the Hamilton Depression Scale score was 13 points, with the presence of sadness, loss of interest in activities and hobbies, insomnia and anxiety. The Modified Fatigue Impact Scale result was 20 points with the presence of tiredness and a reduction of physical activities. The Bladder Control Scale and The Bowel

Control Scale results were normal. Also, the Impact of Visual Impairment Scale result was 1 point with a blurred vision in some conditions. The Perceived Deficits Questionnaire, was 50 points, showed modifications in the memory's capacity and remembering facts and actions, concentration capacity decreased and decision making. Mental Health Inventory was performed and the result was of 40 points, with the following: depression, insomnia, irritability, sadness and modifications of the behavior. The Mos Modified Social Support Survey was 75 points, revealing support from the family in the majority of the situations. After the 6 months, the patient's condition did not change and he obtained the same results at the tests performed, except of the Hamilton Anxiety Scale result that has increased due to the aggravation of the somatic features.

The third patient from the control group, A.A., 35 years, female, with recurrent-remissive multiple sclerosis had three typical attacks for multiple sclerosis in the central nervous system with objective evidence at the clinical examination for the three lesions and was diagnosed 5 years ago. At the beginning of the 6 months, the patient had significant changes in neurologic functions, tremor, and gait with tendency to fall, rapid alternating movements decreased, dysdiadochokinesia, and mild paresthesia in all limbs. Also, the patient presented mild vision problems. The patient's bladder problems were mild. She had difficulties in understanding her emotions. Expanded Disability Status Scale score was 3 points. The patient obtained 28 points at the Hamilton Anxiety Rating Scale test, classifying her for moderate anxiety, with moderate insomnia. The patient obtained 14 points at the Hamilton Depression Rating Scale test, classifying her for mild depression. Her result on Fatigue Impact Scale test was 20 points, having correspondent a mild-to-moderate level of fatigue. The patient's result of the Bladder Control Scale test was 2 points, meaning a level of mild dysfunctions of the bladder. The result of the Bowel Control Scale test was 2 points, meaning a mild level of dysfunctions of the bowel. The result that the patient obtained to the Impact of Visual Impairment Scale test was 3 points, with difficulties in reading books and watching TV. The patient obtained 29 points at the Perceived Deficits Questionnaire test, meaning a mild-moderate frequency of problems with attention and memory. The patient obtained a 60 points result at the Mental Health Inventory scale, meaning a moderate affectation of her mental activity and the way in which the patient considered her mental acuity. About the social support, the patient obtained 60 points at the Mos Modified Social Support Survey, benefiting from social support approximately most of the time. The patient was advised to follow her routine for 6

months. After the 6 months, the patient's results remained the same, only with the increase of the anxiety and depression scales' results because of the insomnia that became moderate from mild.

DISCUSSION

Recent findings with imaging and clinical evidence in the world of science have shown that music therapy is a potent factor in cognitive rehabilitation. The existence of cognitive and perceptual mechanisms has been discovered, although not stimulated by music, yet they are influenced by the brain entities that are activated by music. The affected nonmusical functions are memory, attention and executive function. Significant help of music therapy in patients with brain injury is shown in the literature⁴.

In health sociology literature are cited cases that have benefited from music therapy to develop and complete coping therapies for patients that experience the chronic degenerative neurological condition. In addition, music therapy sessions also had addressability to the power of control and self-awareness of patients⁵.

Melotherapy is a complementary therapy, with great potential to improve the symptoms that accompany multiple sclerosis⁶. From our small study, we concluded that melotherapy improves depression and anxiety and even insomnia, managing to change the quality of life of patients, being a tool with the potential to improve the symptoms of patients with multiple sclerosis. Favorable results were also observed on the patients' cognition, with the extension of the power of concentration, attention and even memory⁷. Also, it was observed the change in the emotional state of the patients, now being able to become more concretely aware of their emotions, feelings and feelings and being able to express them more concretely⁸. On the other hand, the patients' moods has improved, thus changing the fatigue they presented. In conclusion, more extensive and detailed studies are needed on the effects of melotherapy on patients with multiple sclerosis to form a concrete and informed opinion on the subject⁵.

Several studies were performed with patients that experience neurodegenerative diseases about their divinity believes and how religion affects their disease. In these studies, religious music was used and showed great improvements in the patients' emotional state^{9, 10, 11}. Also, a study with patients with Parkinson's disease that used melotherapy showed that their depression symptoms improved by using music in their routine¹². Other studied were performed also with patients that presented neurodegenerative diseases and used physical therapy and inconstantly used music in their sport routines that showed improvements in their

physical, but mostly emotional and mental states¹³⁻¹⁸. All of these are important new assessments for improvements of neurodegenerative diseases patients' lives.

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