OCCUPATIONAL THERAPY - A METHOD FOR IMPROVING THE QUALITY OF LIFE IN PATIENTS WITH PARKINSON

Dumitru Andrei
University of Pitești
Faculty of Sciences
padrefortete@yahoo.com

Abstract: *In this paper I intend to expose and analyze the results obtained by applying of the occupational therapy strategies in patients with Parkinson. In people with Parkinson, the occupational therapist will develop step by step strategies considered as prioritizing by the people having this disease, even in cases when manifested already conditions like: tremors of the extremities, blocking of the displacement movement by blocking motions' initialization. The purpose of the occupational therapy intervention is that to maintain a person active as much time possible, but also to facilitate the independence in his daily occupations, like that of self-care, productivity, leisure time. A functionally active and independent person, even with the help of assistive devices, is a person socially inclusive. The occupational therapist will use different exercises for the recovery of the occupational performance components as mobility, muscle strength, coordination and control.*
Usually the patients suffering from Parkinson's disease have difficulties in performing their daily activities and therefore they come to depend on other people. With the help of the occupational therapy all these problems can be remedied.
In occupational therapy the most important one is the client-centered therapy. Because everyone has his own occupational map, habits, routines, daily personal needs, one must have set up a contingency plan focused on improving or maintaining the participation in daily occupations. This contingency plan will be designed according to the needs, the desires of the customer.
Keywords*: Occupational therapy, inclusive education, recovery exercises, research, Parkinson disease*

Introduction. Description of Parkinson disease

Parkinson disease is a degenerative disease that occurs following a slowly progressive destruction of neurons. Since the affected area plays an important role in the control of movements, the patient shows rigid, abrupt and uncontrolled gestures, tremor and postural instability, this attacks the neural which plays an important role in controlling the movements, and since the causes that generate it are different, and the way of approaching the disease, the treatment is also different, therefore it must be suited to each patient.

In this paper I intend to demonstrate the role of the occupational therapy to improve the quality of life of the people with Parkinson disease.

Although there is no cure for Parkinson's disease, its symptoms can be alleviated with drugs, but also through lifestyle modification and adaptation to the environment. In general, the symptoms can be successfully controlled if the treatment is adjusted to the disease progression. Usually the patients suffering from Parkinson disease have difficulties in performing their daily activities and therefore they come to depend on other people. With the help of the occupational therapy all these problems can be remedied.

It is a common disease, described by James Parkinson in 1817. He made a full description: "an involuntary trembling with the lowering of muscle strength, in the parts of the body without tremors, while even the member is supported, with a progression and forward tilting of the trunk and passing from walking to running, without prejudicing the intellect ".

Typically, Parkinson disease, affects middle aged subjects or elderly subjects with a very progressive and extended development. Although certain cases are familial (family incidence is estimated at 1-2%), normally the illness is sporadic.

It is however known that Von Economo epidemic encephalitis that had a global expansion after World War I had caused similar clinical syndromes like Parkinson disease. It is mentioned in these cases about post-encephalitic Parkinson, but it is

preferable to reserve the term of Parkinson disease to the true agitated paralysis of an unknown cause. Parkinson disease has no known connection with other pathological processes, such as atherosclerosis, trauma, poisonings, although such a relationship has been evoked by describing similar clinical manifestations.

Despite of the diseases wide spreading and the extensive literature on this topic, the anatomical - pathological changes of Parkinson disease are not fully explained. The most common anomalies are localized in melanin neurons of the brain stem (black substance, locus ceruleus), where is noticed in varying degrees, a neuronal refraction with reactive gliosis (more obvious in the black substance) as characteristic eosinophils cytoplasmic inclusions (corpus Lewy). Identical changes are observed in the Meynert basal nucleus. The lesions of pigmented nuclei, though without Lewy bodies, characterize post-encephalitic Parkinson, strionigrical degeneration and Shy-Drager syndrome.

When advanced, the Parkinson disease can not be confused with another disorder, Hypertonia, and slowness of movement, fixity of expression and rhythmic trembling of the limbs, which diminishes during active voluntary movements or in full relaxation, are elements familiar to clinicians. Although these become bilateral in evolved forms, the disease starts typically asymmetrically, for example through a small trembling of the hand fingers or ankle. An akinesis, more or less general, also typical, as a stiffness, hence, even when the shaking is not visible, in few cases the condition is revealed through an immobile expression, fixated face, monotonous, a slowing down and diminishing in motor activity.

The purpose of the research is to develop a intervention plan for the patient with Parkinson, using specific means of occupational therapy.

I will initiate an intervention plan specific to occupational therapy. By using different research methods such as: interviewing method, case study method, the method for the reference frameworks and the method based on occupational models (CANADIAN OCCUPATIONAL PERFORMANCE MODEL, COPM) I will collect enough data that important for setting the targets.

At the end of the work I will apply an occupational performance evaluation tool - CANADIAN MODEL to highlight the success of this work.

The research hypothesis starts from the idea that the existence of an intervention plan consisting of means specific to occupational therapy, contributes to improve the quality of life of Parkinson patients.

The treatment using occupational therapy

The occupational therapy works on the psychomotricity at all levels, practicing for obtaining the normality of motor components, the confidence in their own possibilities, the improvement of attention focusing, all with beneficial effects on personality. Besides the above, the occupational therapy, through the means used, determines the effects in terms of the following points of view:

- intellectually – it has a normalizing influence, mitigates emotions, develops the potential energy, replaces the harmful mental tendencies, replaces the habit of working, educates and enables personal expression, developing initiative;
- physically - restores the (neural-mio-artro-kinetic) neural-muscle-arthrosis-kinetic functions, improves the nutrient substance contribution by activating the blood circulation and metabolic processes, improves the repairing speed, increases the fatigue strength and develops coordination;
- socially - forms and develops the cooperation and responsibility within the group, providing improved social contacts conditions;
- economically - emphasizes the professional vocations, consolidating the vocational directions guidance, creating work habits and helping the person with disabilities to contribute financially to own maintenance.

The occupational therapist will develop to the people with Parkinson the development strategies considered as a priority by the person with the disease, even in cases when manifested conditions like: tremors of extremities, movement blocking by blocking the movement initialization. The purpose of the occupational therapy intervention is that to maintain a person active as much as possible, but also to facilitate the independence in their

daily occupations, like for self-care, productivity, leisure time. A functionally active and independent person, even with the help of the assistive devices, is a socially inclusive person. The occupational therapist will use different exercises for the recovery of the occupational performance components such as mobility, muscle strength, coordination and control.
In occupational therapy the most important is the client-oriented therapy. Because everyone has one's own occupational map, habits, routines, daily personal desires, one must make an intervention plan focused on the improvement or maintaining of the level of participation to the daily activities. This intervention plan will be designed according to the needs, the desires of the customer.

Occupational therapeutic intervention (Marilena Kory-Mercea, Ştefania Kory Calomfirescu, 2009) .

- increasing the functional independence in performing ADL
- Stage I - practicing the writing, make up applying for women
- Stage II – practicing doing the toilet, dressing, feeding, money handling, doors' opening
- Stage III - paying particular attention to the equilibrium while preforming different activities, using aiding equipment
- Stage IV – aims to maintain the remaining functions, requires assistance
- Practicing the initiation of movement and its improvement
- PNF techniques
- The training to use cognitive control in organizing the movement through visual and auditory stimuli

hearing stimuli - involving rhythm, counting or clapping during the execution of some movements or walking movements, counting the steps for some activities and pronunciation during their execution;

visual stimuli - involving visual tracking of the movements to increase the accuracy of the movements (mirror tracked movements) or viewing the steps of an action

- maintaining or improving joints' amplitude
- preventing contractures, improve posture, promote the extension
- exercises for flexibility, stretching
- strength growth
- extensor muscle toning
- improvement in motor function
- preventing atrophy because of non- use
- increase the reciprocal movements
- weight balance
- fine coordination

General activities related torso twisting, turns, walking, rising from a chair

- balance
- transitional movements
- increase of resistance
- energy conservation and simplifying the work
- establish a daily schedule according to fatigue
- walking rehabilitation
- lifting the leg to walk, avoiding feet dragging
- avoid bending of the trunk forward
- swinging the arms along the body
- turnings are done in a large loop in the shape of "U", preventing the pivot turning
- if the patient has the feeling that at the initiation of stepping, the foot is "glued to the floor" the patient is taught the starting strategies:
- he imagines that he passes over an obstacle and lifts the leg
- he sways from one side to the other to remove the blocking sensation
- he mustn't be rushed/ or pushed by the care attendant as this sometimes is extending the blocking episode
- preventing the falls
- improving the posture and gait
- the patient is taught to get support from the stable objects (walls, furniture) when he reaches for an object, or opens doors
- the objects are transported to the supporting polygon with one hand because the other one will be used for support
- placing the chair is done slowly, with one hand on its arm
- raise off the bed from lying down position is done gradually: 15 seconds he sits on the bed side, 15 seconds he remains standing with support
- compensation techniques for the cognitive decline
- firm daily programs
- writing pad
- stress prevention and management
- pedaling the bicycle can change the lives of people with Parkinson because this helps reducing the symptoms by 35%.

- dancing can be an alternative for spending the leisure time but also for the recovery because it allows maintaining mobility, balance control, preventing thus the vicious postures
- facilitating walking through the house by removing obstacles,
- adjustments of the environment to facilitate support, orientation, balance control
- removing the barriers and prevent falls
- adapting the environment for optimal functionality
- Establishing the resting places during the activity
- facilitating the walking through the house by removing obstacles,
- adaptations to facilitate support, orientation, balance control
- removal of barriers and prevent falls
- compensation of lack in perception

The occupational therapy offers to the patient the opportunity to participate actively in negotiating treatment purpose, which is the priority and the center of the intervention assessments. (Ion Moldovanu, Gabriela Pavlic, 2011) .

Data interpretation

When I started the occupational therapy program my client could not keep the comb in her hand as she had difficulties in handling it, because of the very long combing process. Currently, the client uses a suitable brush which is much easier to use. If before it took a lot to comb and sometimes required help from someone else, she now can do so better and faster.

Following the interview I noticed that my client had a problem when she brushed her teeth, requiring help because he could not handle toothpaste and toothbrush. After I modified these objects, I noticed a huge progress in this activity. The client no longer needed help to brush her teeth.

There is a huge problem when she had to leave the house alone because my client couldn't manage to lock and unlock the front door. I managed to purchase a locking system with a magnetic card that is much easier to handle. (Durner J, Fickert G, Kroner W, Stadler B Prof. Dr.Mihaela Simu Lundbeck România,2009).

I noticed that the patient had trouble when dressing. So that she wouldn't have any difficulties I modified the cabinet handles, the clothes were arranged then more efficiently, but I also modified some outfits. The client considered my advice and bought clothes very easy to put on.

The patient had serious problems when she ate therefore I modified the kitchen so that it was much easier to use. I changed the cutlery and drawers handles, and I raised the table so that this activity could be easier done.

As we can see following an occupational therapy intervention I obtained the best results, increasing the patient satisfaction level as a result of the occupational therapy program so that my client was very satisfied and was willing to continue this activity and solve other problems.

Theoretical conclusions

Even though the modern treatment of Parkinson disease seems more satisfactory than before the introduction of the treatment with levodopa, including of the stereotaxic surgery, many problems still exist. No treatment has any effect on the pathological process that is the neuronal degeneration.

A point of irreversibility is achieved when the pharmacological treatment is not enough to compensate for the neuronal loss. The major difficulties are the brutal fluctuations or variations in response to drugs (on-off response), the appearance of a weakness or immobility (akinesis and dyskinesia, which are a problem for the future.

Practical Conclusion

The occupational therapy activity is a considerable support for other types of rehabilitation actions and should be conducted in cooperation with other categories of specialists, in interdisciplinary teams, in order to ensure the maximum effect of a complex program of therapy. The individuals possess their capacity to adapt and for a normal operation and must be regarded in relation to the environment they live in and the therapeutic action addressed to them must consider the social, psychological and physical factors.

To improve the quality of life of the patients with Parkinson we need to involve the interdisciplinary team and occupational therapist. With the help of the occupational therapy, the patients suffering of this disease can succeed to have a normal life, without being dependent on others.

Recommendations

Maintaining as much as possible of a good physical shape despite the physical impairments caused by the disease is closely related to the concept of a "continuous movement". This establishes a functional balance between the contracted muscle and skeletal joints system, highly dependent on the quantity and quality of movement.

It is very important that the patient with Parkinson disease to realize this and accept the recommendations of the neural rehabilitation team. The patient should be encouraged to continue any activity (physical and mental) despite of the stage of disease, as with all motor disability to maintain oneself as much as possible independence of motion.

The body movement brings good blood circulation and normal functioning within normal parameters of other organs with the maintaining of a good psychological tone.

In everything that is the rehabilitation of patients with Parkinson disease a fundamental role is represented by pushing the patient's family and care giver for the care in general. This element is tested in the daily practice where we realize that the good evolution of a patient with Parkinson disease is closely linked to the support he/ she has from the family, with a high psychological tone of the family and with an effort for the integration in physical and psychical life.

The openness towards the collaboration with the medical centers specialized in rehabilitation make in our country also to be given to it an important role in the recovery of the patients with Parkinson disease, which requires the formation of a complex teams, adequate, with perseverance and patience that are essential together with the medications therapy.

References:

[1]. Bogdan O. Popescu, Ovidiu Bajenaru, *Elemente esentiale de neurologie clinică*, *„Essential components of clinical neurology*" ,"Carol Davila" University Publishing House, Bucharest, 2009, p. 192

[2]. Perju-Dumbrava L. *Strategii terapeutice moderne in Boala Parkinson*. *„Modern Therapeutic Strategies in Parkinson disease",* "Iuliu Hatieganu" Medical University Publishing House Cluj-Napoca 2002, p.213-215

[3]. Marilena Kory-Mercea, Ştefania Kory Calomfirescu – *Kinetoterapia Pacienților cu Boala Parkinson*, „Physical kinetic therapy for Parkinson disease patients", Risopront Publisher, Cluj-Napoca 2009,p. 231-233

[4]. Ion Moldovanu, Gabriela Pavlic – *Boala Parkinson Aspecte Diagnostice şi Tratament,* „Aspects of Parkinson disease diagnosis and treatment" Chişinău 2011, p. 189-190

[5]. Durner J, Fickert G, Kroner W, *Stadler B. Pregătire pentru viața de zi cu zi. Exerciții şi indicații cotidiene pentru pacienții care suferă de boala Parkinson şi pentru aparținătorii acestora. Versiunea în limba romana Prof.dr.Mihaela Simu Lundbeck România representative office*,"Preparation for everyday life. Exercise and daily indications for patients suffering from Parkinson disease and their caregivers". Romanian language version by Prof.dr.Mihaela Simu Lundbeck Romania Representative Office, 2009, p. 276.

[6]. www.scribd.com