

Parkinson's disease, early physiotherapeutic rehabilitation during the period January-December 2022 at the Central Polyclinic, Durres

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ABSTRACT

The importance of early physiotherapeutic rehabilitation in Parkinson's disease. The objective of this topic is to slow down Parkinson's disease, preventing the physical problems, by means of advanced physiotherapeutic rehabilitation in combination with drug therapy. The study was conducted during the period January-December 2022, in the city of Durres. There are a total of 15 patients in the age group of 41-70 years old and suffering from Parkinson's Disease. They underwent simple physiotherapeutic rehabilitation and were also treated with medications. Data were analyzed, and conclusions were drawn through the SPSS program. Out of 15 patients included in the study, we found that the most affected age group is 61-70 years old. There is a predominance of this age with 11 cases (73%) compared to the 51-60 age group with 3 cases (20%), and with the fewest cases, we have the 41-50 age group with 1 case (7%). The age group of 41-50 years has the easiest stage 1 and occupies 17% of cases; the age group of 51-60 years has a slightly more severe stage 2 and occupies 33%, while the age group of 61-70 years old still more severe belongs to stage 3 and accounts for 50% of cases. Our country urgently needs to establish standardized rehabilitation protocol. It helps reducing the disability and slowing down from 1 to 5 since in this paper, we proved that with early physiotherapeutic rehabilitation, we had good results for stages 1-2-3 of the disease.

Keywords: Parkinson's disease, Physiotherapeutic management, Physical therapy, Early physiotherapeutic rehabilitation

Introduction

Parkinson's disease is a progressive disorder that affects the nervous system and the parts of the body controlled by it. Because of Parkinson's disease, some nerve cells (neurons) in the brain gradually break down or die [1, 2]. Many of the symptoms result from the loss of dopamine-producing neurons. When dopamine levels decrease, atypical brain activity begins.

The symptoms of the 5 different stages of this disease are Primary dyskinesia, Primary tremor, Stiffness (bradykinesia), Postural instability, Gait disorders (freezing) (Gait disorder with postural instability - PIGD), and Cognitive changes [1-3].

Definitions

Parkinson's disease is the second most common neurodegenerative disease [1]. It has been recognized as a disease since the early 1800s when it was first described by Dr. James Parkinson (the English doctor whose name bears the name of the disease itself) [4]. The neurophysiology of Parkinson's disease involves several centers of the frontal lobe of the brain, including the dorsolateral prefrontal cortex (DLPFC), which is the main center for the regulation of attention. All functions and tasks of the DLPFC are related to attention, activity, selection of the specific motor plan for the activity, and concentration on what

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needs to be done and how it is done. We must understand that this structure is essential in dealing with the external environment as it distinguishes who should be given priority, who should be ignored, who should be given peripheral attention to understand what changes and what does not [5, 6].

Etiology

According to the WHO, the cause of Parkinson's disease is unknown, but several factors seem to play an important role in its development. Environmental and occupational hazards or exposure to certain toxins can directly affect brain health. Some studies suggest that exposure to heavy metals, such as iron, copper, lead, and manganese, may increase the risk of developing Parkinson's disease [7]. Also, Parkinson's disease has been associated with exposure to pesticides in occupational and non-occupational environments (DALYs). Also, genes: researchers have identified specific genetic changes that can cause Parkinson's disease. Cases where there are many family members affected by Parkinson's disease seem to influence the development of the disease in the offspring.

Physiotherapeutic treatment

- Physiotherapy rehabilitation according to: (Mike Studer, PT, DPT, MHS, NCS, CEEAA, CWT, CSST, FAPTA, 2021)
- Physiotherapy rehabilitation in Parkinson's patients through Applications of Neuroplasticity: The physiology of brain repair is aided by physiotherapeutic rehabilitation [7-12]. Thus, we can slow pathology and maximize function.
- Maintaining the viability of first-order neurons.
- In a person with basal cell (BCL) dysfunction, if we want to be successful, we have to bypass these (BCL) and actually use the DLPFC, which is a more powerful center of attention, which is usually more slightly compromised and occasionally completely preserved by disease.
- We then focus on trying to use the cerebellum (movement guided by sensory inputs)
- An intense free-body treadmill workout
- To test the balance capacity
- Compensatory efforts with visual and verbal stimuli
- On procedural memory, we need to perform repetition
- Aerobic exercises

Assessment scale for parkinson's disease

- For patients
- For Family Members
- For Caregivers
- SCORE SHEET FOR MDS-UPDRS: (Unified Parkinson's Disease Rating Scale)
- BERG: (Functional Balance Assessment Scale)
- BARTHEL INDEX – (Daily Activities Assessment scale)

- HOEHN AND YAHR SCALE: LAPMER- Level of deep/severe activity in the hindquarters; determining the clinical stage of the patient suffering from Parkinson's:

- HOSPITAL ANXIETY AND DEPRESSION SCALE (H. A. D. S): (a scale that measures anxiety/depression)

Purpose of the study

- To assess the epidemiological situation in the city of Durrës for Parkinson's disease in the period January-December 2022.
- Description of socio-demographic characteristics. Our attention is particularly focused on determining the ratio between the total number of all cases of Parkinson's disease in relation to age, stages of the disease, and results of early physiotherapeutic rehabilitation.
- Recognition of Parkinson's disease, frequency, and physiotherapeutic methods applied to these patients.
- Identification of groups at risk of Parkinson's disease.
- Drawing up recommendations and conclusions that can affect the improvement of the quality of life of the population as a whole.
- Increasing knowledge about the prevention of treatment and physiotherapeutic care in patients with Parkinson's by also implementing the assessment scales.
- Health education regarding lifestyle and care after diagnosis.
- Determining the basic guiding principles for a good approach to rehabilitation in accordance with the experience of foreign countries.

Object of the study

The objective of this study is to slow down Parkinson's disease, preventing the physical problems it brings, through early physiotherapeutic rehabilitation in combination with drug therapy. By slowing the progression from stage one to stage five of the disease, we make it possible to increase the quality of life and avoid anxiety/depression in patients suffering from Parkinson's disease.

Materials and Methods

The study was conducted during the period January-December 2022, and the data was extracted from the data of the clinical records of the patients at the Central Polyclinic, Durrës. A total of 15 patients resulted in Parkinson's disease. The data obtained were analyzed, and conclusions were drawn through the SPSS program.

Results and Discussion

In the Central Polyclinic of the city of Durrës and the Regional Hospital of Durrës, in the Department of Neurology, patients with various neurological disabilities are diagnosed and rehabilitated, including patients with Parkinson's disease. Our study has made us understand a lot about this pathology in our country and try to implement early physiotherapeutic rehabilitation as we proved that the patients had good results from physiotherapeutic rehabilitation. In the last year, January-December 2022, 15 patients with Parkinson's disease were diagnosed and rehabilitated, with different durations, resulting in disability in these patients; the age group taken in the study is 41-70 years old, from which it was found that the age group the most affected is 61-70 years old (Table 1). There is a predominance of this age with 11 cases (73%) compared to the 51-60 age group with 3 cases (20%), and with the fewest cases, we have the 41-50 age group with 1 case (7%) (Figure 1). Regarding the stages of the disease, we found that the age group of 41-50 years has the easiest stage and belongs to stage 1 and occupies 17% of cases; the age group of 51-60 years has a slightly more severe stage and belongs to stage 2 and occupies 33% of cases, while the age group of 61-70 years old still more severe belongs to stage 3 of the disease and accounts for 50% of cases (Figure 2).

Table 1. Distribution of stages by age group and relevant cases

Age groups Year 2022	Phases	Cases
41-50 years old	1	1
51-60 years old	2	3
61-70 years old	3	11
Total	Rehabilitation results for each phase = 3 (good result) of PD	15

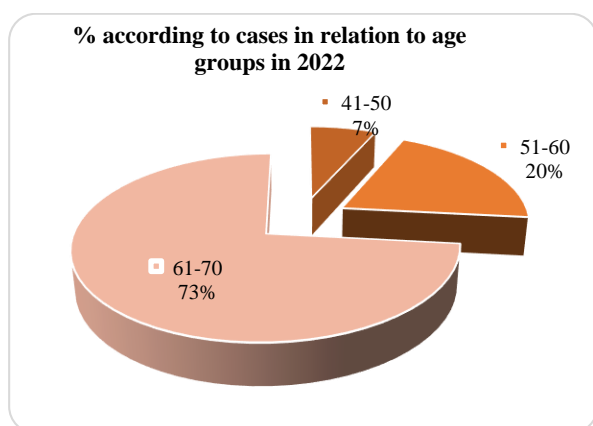


Figure 1. % of cases divided by age group 41-70 years

Figure 1 shows that the age group of 61-70 years has the most cases (for the year 2022) and accounts for 73% of all cases of SP, followed by the age group of 51-60 years with 20% of cases and the age with the fewest cases is the age of 41-50 years and accounts for 7% of all cases.

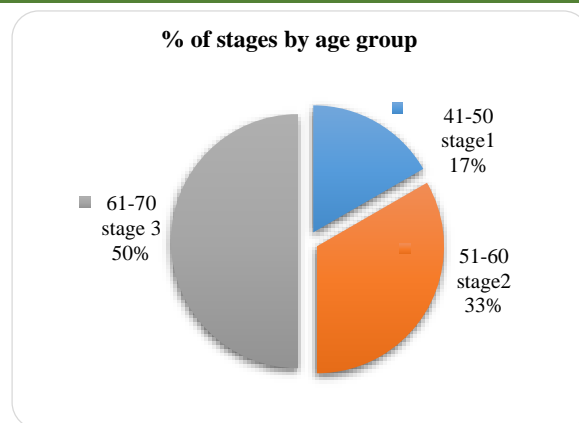


Figure 2. % of stages in relation to age groups

Figure 2 shows us that stage 3, belonging to the age group 61-70 years, has the largest % and occupies 50% of the three stages, followed by stage 2, belonging to the age group 51-60 years, with 33% and the lowest % of there is stage 1 which belongs to the age group of 41-50 years and occupies 17% of cases.

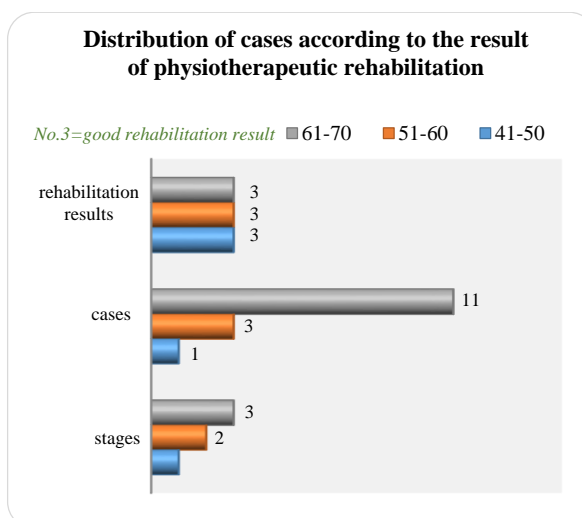


Figure 3. Distribution of cases according to the result of physiotherapeutic rehabilitation according to the respective phases

Figure 3- It clearly shows us that physiotherapeutic rehabilitation according to each stage of the disease where the patient is located has had a good result.

Parkinson's disease (PD) represents the second cause after Alzheimer's, as the disease with high disability worldwide. According to the statistical data obtained from the WHO, we have reached the conclusion that approximately 5 million people are affected by SP. Of these, 1.5 times more men are affected [2, 13, 14].

A total of 15 patients aged 41-70 years were included in our study. For Parkinson's disease, the most affected age group is 61-70 years old with 11 cases (73% of the total cases) and is followed by the 51-60 age group with 3 cases (20% of the total cases), while the age group with the fewest cases is 41-50 years old with 1 case (7% of the total cases with Parkinson's disease). We also noticed that in the age group of 61-70 years, we have more cases of the 3rd stage of the disease compared to the age group of 51-60 years

that were in the 2nd stage of the disease and the age group of 41-50 years who are in the 1st stage of the disease.

Regarding the results of physiotherapeutic rehabilitation according to the age groups and the phases they belong to, we had good rehabilitation results (**Figure 3**).

Clarification: We proved that early physiotherapeutic rehabilitation is extremely important for patients suffering from Parkinson's disease in slowing it down so the patient reaches the transition from stage -1 to stage 2 and so on more slowly.

But according to the many researches that we carried out for this study, it also turned out that if we were to establish physiotherapeutic rehabilitation protocols and evaluation scales, these results would increase even more in % and would be from - good results - to - very good results [15-17].

It must be said that in developed countries, the incidence of SP in the next 10 years will increase due to the aging of the population, while the results of advanced physiotherapeutic rehabilitation have increased [2, 18-20].

One of the reasons why we chose this topic is the fact that PD has a very important socio-economic impact, especially in relation to the disability it causes in patients based on the stages they are in. Precisely, to avoid these problems, we have made it possible with this study to have a deeper knowledge of advanced physiotherapeutic rehabilitation and not only simple physiotherapeutic rehabilitation of patients with PD.

Foreign countries use assessment scales and advanced rehabilitation methods, unlike our country, which uses simple physiotherapeutic rehabilitation; this finding is reflected in the high percentage of improvement of patients rehabilitated in foreign countries [21, 22].

Conclusion

Our country has an urgent need for the establishment of a standardized rehabilitation protocol and its evaluation and application scales.

The use of physiotherapeutic treatments has resulted in the reduction of physical and motor disability and in the improvement of the life of patients suffering from Parkinson's disease, always accompanied by drug therapy. In this way, not only does this therapy help in reducing disability but also in reducing patients' depression as they manage to become more autonomous. and we will also have socio-economic benefits for our country because Parkinson's disease brings a major disability for these patients. Now is the time to apply advanced physiotherapeutic rehabilitation in our country as well. However, it must be said that the management of Parkinson's disease has significantly improved in recent years in our country as well.

Recommendations

- We must bear in mind that early physiotherapeutic rehabilitation makes it possible to slow down Parkinson's disease, insufficiency, and disability of these patients, and as a result, we have fewer problems for the patients

themselves, their families, society, and the economy of our country.

- Physiotherapists play a very important role in the patient's multidisciplinary treatment team, but they also face a number of different challenges. The creation of a standardized rehabilitation protocol and consequently the assessment scales and advanced rehabilitation methods and their application not only helps to reduce disability but consequently also reduces the depression of patients since they manage to become more autonomous for almost all ADLs.
- We must enable physiotherapists to have their dignity and be valued as an important part of a multidisciplinary staff.
- Great importance should be given to the design of new strategies and the implementation of health policies in favor of increasing the role of the physiotherapist.
- Information campaigns should be undertaken mainly for physiotherapy and medical students about the disease, etiology, early diagnosis, management methods, and complications in cases of neglect of treatment protocols.
- Promotion of a good lifestyle, including the elimination of risk factors.
- Construction of a stable platform for continuous control of patients with Parkinson's disease.
- Awareness and sensitization of family members on the importance of physiotherapeutic rehabilitation in order to improve the physical health of these patients.
- Training of the staff of health institutions.

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References

1. Wijnberg N, Quinn NP, Bloem BR, Duysens JE, Smits-Engelsman BC, Kingma H. Posture in Parkinson patients: A proprioceptive problem. In: Control of posture and gait. Maastricht: Symposium of the International Society for Postural and Gait Research 2001 (pp. 758-762).
2. WHO. Launch of WHO's Parkinson disease technical brief; 2022. Available from: <https://www.who.int/news/item/14-06-2022-launch-of-who-s-parkinson-disease-technical-brief>; 14-06-2022 WHO.
3. Global status report on the public health response to dementia. Geneva: World Health Organization; 2021. Available from:

- https://apps.who.int/gb/ebwha/pdf_files/WHA75/A75_10Add4-en.pdf; Apr 27, 2022 WHO.
4. Hendriks HJ, Bekkering GE, Van Ettekenoven H, Brandsma JW, van der Wees P, De Bie RA. Development and implementation of national practice guidelines: A prospect for continuous quality improvement in physiotherapy: Introduction to the method of guideline development. *Physiotherapy*. 2000;86(10):535-47.
 5. GBD Compare. Viz Hub. Institute for Health Metrics and Evaluation; 2019. Available from: <https://vizhub.healthdata.org/gbd-compare/>;
 6. LeWitt PA, Kymes S, Hauser RA. Parkinson's disease and orthostatic hypotension in older adults: Recognition and management of risk factors for falls. *Aging Dis*. 2020;11(3):679-91.
 7. Svenningsson P, Westman E, Ballard C, Aarsland D. Cognitive impairment in patients with Parkinson's disease: Diagnosis, biomarkers, and treatment. *Lancet Neurol*. 2012;11(8):697-707. doi:10.1016/S1474-4422(12)70152-7
 8. Hughes AJ, Daniel SE, Lees AJ. Improved accuracy of clinical diagnosis of Lewy body Parkinson's disease. *Neurology*. 2001;57(8):1497-9.
 9. Seyfried TN, Choi H, Chevalier A, Hogan D, Akgoc Z, Schneider JS. Sex-related abnormalities in substantia nigra lipids in Parkinson's disease. *ASN Neuro*. 2018;10:1759091418781889.
 10. Abbruzzese G, Marchese R, Avanzino L, Pelosin E. Rehabilitation for Parkinson's disease: Current outlook and future challenges. *Parkinsonism Relat Disord*. 2016;22(Suppl 1):S60-4. doi:f728r8
 11. Robles-Garcia V, Corral-Bergantinos Y, Espinosa N, Garcia-Sancho C, Sanmartin G, Flores J, et al. Effects of movement imitation training in Parkinson's disease: A virtual reality pilot study. *Parkinsonism Relat Disord*. 2016;26:17-23. Available from: [http://doi.org/cgqvhttps://www.prd-journal.com/article/S1353-8020\(16\)30050-5/fulltext](http://doi.org/cgqvhttps://www.prd-journal.com/article/S1353-8020(16)30050-5/fulltext)
 12. De Goede CJ, Keus SH, Kwakkel G, Wagenaar RC. The effects of physical therapy in Parkinson's disease: A research synthesis. *Arch Phys Med Rehabil*. 2001;82(4):509-15. Available from: <https://pubmed.ncbi.nlm.nih.gov/11295012/>
 13. Kon T, Ueno T, Haga R, Tomiyama M. The factors associated with impulse control behaviors in Parkinson's disease: A 2-year longitudinal retrospective cohort study. *Brain Behav*. 2018;8(8):e01036.
 14. Sigrist R, Rauter G, Marchal-Crespo L, Riener R, Wolf P. Sonification and haptic feedback, in addition to visual feedback, enhances complex motor task learning. *Exp Brain Res*. 2015;233(3):909-25. doi:f62sdl
 15. Studer M. Neurological Rehabilitation-Neuroplasticity, Parkinson, Ekulibro and Stroke. Rehabilitation strategies to slow down Parkinson's disease; 2021. Available from: <https://tv.streamegedu.com/programs/riabilitazione-neurologica-neuroplasticita-parkinson>
 16. Parashos SA, Bloem BR, Browner NM, Giladi N, Gurevich T, Hausdorff JM, et al. What predicts falls in Parkinson disease? Observations from the Parkinson's Foundation registry. *Neurol: Clin Pract*. 2018;8(3):214-22.
 17. Kompoliti K, Goetz CG, Leurgans S, Morrissey M, Siegel IM. "On" freezing in Parkinson's disease: Resistance to visual cue walking devices. *Mov Disord*. 2000;15(2):309-12.
 18. Petzinger GM, Fisher BE, McEwen S, Beeler JA, Walsh JP, Jakowec MW. Exercise-enhanced neuroplasticity targeting motor and cognitive circuitry in Parkinson's disease. *Lancet Neurol*. 2013;12(7):716-26. doi:f2j97z
 19. Georgiev D, Hamberg K, Hariz M, Forsgren L, Hariz GM. Gender differences in Parkinson's disease: A clinical perspective. *Acta Neurol Scand*. 2017;136(6):570-84.
 20. Colombo D, Abbruzzese G, Antonini A, Barone P, Bellia G, Franconi F, et al. The "gender factor" in wearing-off among patients with Parkinson's disease: A post hoc analysis of DEEP study. *Sci World J*. 2015;2015:787451.
 21. Mantri S, Fullard ME, Duda JE, Morley JF. Physical activity in early Parkinson disease. *J Parkinsons Dis*. 2018;8(1):107-11.
 22. Richter D, Bartig D, Muhlack S, Hartelt E, Scherbaum R, Katsanos AH, et al. Dynamics of Parkinson's disease multimodal complex treatment in Germany from 2010–2016: Patient characteristics, access to treatment, and formation of regional centers. *Cells*. 2019;8(2):151.