04

The importance of the multidisciplinary team in the management of Parkinson's disease and parkinsonism

EXPERIENCE REPORT

LUÍSA GARCIA VIEIRA[1], GIULIA OLIVEIRA SANTOS[1], ANA LAURA HENRIQUES ARAUJO FERREIRA[1], ANA GABRIELA ALMEIDA BAPTISTA[1], ISABELA STORCH CARVALHO[1], LAVÍNIA PEREIRA DOS SANTOS[1], RAQUEL DE CARVALHO LANA[1]

[1]FACULDADE DE CIÊNCIAS MÉDICAS DE MINAS GERAIS, BELO HORIZONTE-MG, BRASIL.

CORRESPONDING AUTHOR: RAQUEL DE CARVALHO LANA, ALAMEDA EZEQUIEL DIAS, 275, CENTRO. CEP: 30130-110 – BELO HORIZONTE/MG – BRASIL RAQUEL.CAMPELO@CIENCIASMEDICASMG.EDU.BR

ABSTRACT

Introduction: Parkinsonism is a group of diseases that cause symptoms such as bradykinesia, rigidity and postural instability, but with different pathophysiology. Among them, Parkinson's disease (PD) is the most common disabling neurodegenerative disease, characterized by motor and non-motor deficits that can lead to a reduction in the patient's quality of life**. Objective:** To demonstrate the importance of multidisciplinary treatment for the adequate management of PD and parkinsonism, through the contribution of extensionists from Medicine, Nursing, Physiotherapy and Psychology courses. **Experience report:** The extension project was developed at a private higher education institution in Belo Horizonte, by students of Nursing, Medicine, Physiotherapy and Psychology courses from August to December 2022. In the first meetings, patients were evaluated with clinical and physical tests and vital signs were measured before and after physical exercises were carried out, followed by a talking circle with different thematic. Each patient was treated comprehensively, equitably and with quality care. **Conclusion:** There was a significant improvement in physical fitness, in emotional well-being of patients and in participants' knowledge about PD, observed through tests, progress in the exercises offered, and positive feedback from the patients and their

companions. Therefore, the participation of a multidisciplinary team in the treatment of patients with PD and Parkinsonism is essential.

Keywords: Parkinson's disease; Secondary Parkinson's disease; Patient Care Team.

INTRODUCTION

Parkinsonism is a group of diseases that cause symptoms such as bradykinesia, rigidity, and postural instability, but with different pathophysiology[1]. Among them, Parkinson's disease (PD) is the most common and is characterized as a chronic, neurodegenerative disease that progressively affects the neurons of the substantia nigra, causing an accumulation of Lewy bodies, in addition to reduction in dopamine production, generating a deficit in the individual's motor function. The disease has an unknown etiology and is characterized by the combination of classic motor symptoms [2,3,4] and non-motor symptoms such as depression, cognitive deficits, loss of smell and sleep disorders (Rapid Eye Movement/REM)[5].

PD is the second most prevalent neurodegenerative disease in the elderly, especially over 65 years of age and in males[2]. It affects around 1 to 3% of this general population, and as it develops a continuous and severe effect, it causes suffering for the elderly person[6]. According to the World Health Organization, it is estimated that 100 to 200 cases are diagnosed per 100 thousand inhabitants, and approximately 10 million people in the world have PD [7].

It is known that PD currently has no cure and to achieve longevity, the intervention is complex and requires multiple professionals [8]. However, the daily activities of people with PD are limited and they also face cognitive difficulties and disorders. In this way, many individuals begin to have impaired social relationships, which interferes with their psychological-emotional aspect. In this context, PD treatment should aim at neuroprotection, to reduce the progression of the disease and control the various symptoms[3, 4].

The patient with PD must receive care from a multidisciplinary team, and it is necessary to direct a specialized care plan for each individual and their family members, aiming to achieve independence. These professionals are important to guarantee non-pharmacological treatment and to support pharmacological therapy for these patients.

Regarding physiotherapeutic support, group physiotherapy, performedwith several patients at the same time under the supervision of a professional, is relevant as a neuro-rehabilitation intervention in the global management of PD, considering that it can improve gait, balance, and performance of daily activities, promoting a feeling of physical and mental well-being[10].

Current evidence demonstrates, through a randomized clinical trial, that regular physical exercise has a positive impact on the patient's symptoms and quality of life. This was assessed through the significant difference in the score on the Unified Parkinson's Disease Rating Scale–part III[11]. One way to introduce physical exercise into the patient's life is through in-

clusion in a group aimed at patients with PD, as in addition to become physically active, they can also have social, scientific, and emotional support. In this perspective, it shows the need to develop specific groups focused on multidisciplinary care for patients affected by PD, aiming to improve patients' quality of life.

In relation to psychological assistance, support groups are very important, as they constitute a fundamental support network for patients with PD and their families, providing moments for exchanging experiences and mobilizing efforts in the search for autonomy, well-being, and self-esteem of the participating individuals[12]. SANTANA, et al, 2020, highlights in their study the importance of this intervention, since there is a tendency for people with PD to become depressed, isolated and restricted in social participation[12].

The multidisciplinary health team within the respective areas must develop actions with goals to enhance the quality of life of people with PD, and it is undoubtedly important to develop a care plan for each person and that includes different types of interventions, not just pharmacological ones. Nonetheless, standardization and comprehensive care for patients with PD[9] can be achieved, considering the most prevalent demands of patients with PD.

In this sense, 'Live Better with Parkinson', an extension project developed in a Private Higher Education Institution (HEI) in the city of Belo Horizonte, Minas Gerais, it was created in 2018 and has been in action ever since. The project includes a multidisciplinary team, to meet the needs of patients with PD and parkinsonism. It covers the areas of physiotherapy, medicine, psychology and nursing. Various exercises and talking circles about PD and its repercussions are carried out at the meetings. Furthermore, the project schedule includes talking circles with psychology students to promote the mental well-being of patients.

OBJECTIVE

The main objective of the report was to demonstrate the benefits of a multidisciplinary extension project focusing on comprehensive and individualized care and improving the quality of life of patients with PD and parkinsonism.

EXPERIENCE REPORT

The present work was an extension project developed by students from the Nursing, Physiotherapy, Medicine and Psychology courses at a private Higher Education Institution, in the city of Belo Horizonte, Minas Gerais, with individuals with PD and other parkinsonisms. It was started at the end of August 2022, when the academics met with the supervisor for instructions on how to conduct project activities, distribute tasks, and train individuals to effectively apply the tests that will be used. Then, from September onwards, patients attended the outpatient clinic to begin the tests, they would only be able to start the exercises proposed by the physiotherapy course students after completing the physical test.. In the end, 12 patients with PD and parkinsonism, aged between 45 and 80 years, were evaluated. This project took place throughout the year, therefore, there was a selection process for new interns, while the patients remained throughout the project editions. Patients were

recruited from previous contacts with the project supervisor, through referrals made by health professionals and after participation in scientific researches, if they demonstrated interest in participating in the proposed activities and met the inclusion criteria in the group: being a patient diagnosed with PD or other parkinsonism and be able to walk without assistance.

The extension activities took place between the months of September and December 2022, every Tuesday and Thursday, with an average duration of one and a half hours and were performed in the institution's own Physiotherapy outpatient clinic, where some materials and equipment were made available. Throughout the meetings, ten students and an average of twelve patients participated, some of which participated remotely, via Google Meet platform.

Initially, the students were instructed on the activities to be carried out throughout the period and trained to carry out tests and initial assessments of patients. They completed each patient's records with sociodemographic and clinical data, following the application of the tests. The following tests were performed: the motor domain of the UPDRS, which evaluates the patient's signs and symptoms, characterizing the level of severity of the disease[14]; the Human Activity Profile (HAP), a questionnaire designed to assess an individual's level of physical activity, which evaluate activities of daily living they can or cannot perform or have never performed[15]; the Montreal Cognitive Assessment (MOCA), a test that assesses individual's cognition, including, among others, memory, attention and language[16]. The Depression Anxiety and Stress Scale (DASS), which assesses the individual's emotional state was also used[17].

Furthermore, the following physical tests were carried out: 6-minute walk test (6MWT), which assesses the distance the individual covers within this time, with assessment before and after the test of blood pressure, heart rate and level of exertion by BORG scale[18]; The 10-meter walk test (T10M), which assesses the individual's usual and maximum walking speed[19]; the Timed Up and Go Test (TUG), which assesses the patient's balance and stability[20], being carried out with and without dual tasks. All students participated in these assessments with the support of the faculty advisor.

In addition, several activities were carried out during the project. At every meeting, medical and nursing students measured the patients' blood pressure and heart rate. Participants performed physical exercises, which involved balance, strengthening, motor control, dual task training and also exercises that could help in carrying out activities. basic skills, such as sitting and getting up from a chair, picking up objects, climbing steps. These exercises were prepared in advance by the physiotherapy students and adapted to the conditions of each patient. They followed the Portuguese version of the European Physiotherapy Guideline for PD as a basis.[21].

During the activities, all students accompanied and helped patients, providing support and security, whenever necessary. After the exercises, there was a talking circle with different topics according to the patients' demands. The medicine and nursing students prepared it in advance for every Tuesday meetings,

with the aim of instructing and guiding patients. A different theme was discussed each day, such as fall prevention, in which we talked about adequacy of non-slip mats, furniture in safe locations, grab bars on stairs and bathrooms. Another theme was parkinsonian medications, discussing information such as side effects, doubts about administration and the reason why they are taking them. On Thursdays, the psychology students prepared a talking circle with topics suggested by the participants themselves. In each meeting, one of the patients chose a topic of interest through conversations and according to demand, the topic was addressed. One of the topics covered were: risk of falls in Parkinson's disease, muscle stiffness and balance, importance of physical exercise, respiratory disorders, sleep disorders, salivation, and measures to prevent choking, the relevance of correct use of medications and intestinal constipation. Generally, during these moments, the patients' companions were also present and shared their experiences with others. The

students initiated the conversation, providing explanations about the topic, while patients and companions were also given the opportunity to share their thoughts. Furthermore, professionals from different areas, such as speech therapists and physiotherapists, were present in some of these conversation circles, to expand exchange and knowledge. Afterwards, students used social networks Instagram and WhatsApp to disseminate information. With the same theme covered in the meetings, they prepared informative posts with the aim of reaching more people. At the end of each meeting, students again checked the patients' vital signs. All academics actively participated in all activities carried out in the project, helping to progress them and ensuring the safety of participants.

DISCUSSION/ THEORETICAL REFLECTIONS

During the execution of the extension project, it was possible to identify the individuality of each patient and perform activities based on each patient's needs. In this perspective, combined with literature, several activities were planned and carried out to develop and improve motor and cognitive symptoms, as well as the social participation of the target audience. In the physical domain, the development of functional training with the assistance of physiotherapy graduates, enabled improvements in coordination, balance, gait, agility and rigidity, seen through the physical tests described, as pointed out in the study by BARBOSA, et al, 2022. This study highlights the importance and impact of physical exercise and physiotherapeutic monitoring/treatment in improving symptoms and quality of life of individuals with PD and/or parkinsonism[10]. Furthermore, it was possible to observe improvements in other aspects, through reports of participants and observation of progress during conversation circles.

The literature indicates a tendency for people with PD to become depressed and socially isolated. Depression is one of the most serious symptoms of PD and is related to a lack of dopamine in the body and, when associated with other personal and social life factors, such as difficulties in relationships and past frustrations, tend to intensify.[12] However, in the cognitive domain, patients were more attentive, communicative and with subtle memory development. The meetings conducted in talking circles have proven to be instrumental in preventing or alleviating depressive symptoms. Reports from relatives and partners who are actively involved in the patients' everyday lives have highlighted the positive impact. Patients have expressed their ability to vent and share the thoughts that burdened them during these sessions, consistently expressing gratitude at the end of each conversation.

Furthermore, active social participation resulted in significant advancements in socialization, self-esteem, and anxiety reduction. It also fostered the strengthening of bonds among the participants, as well as between the participants, students, and the supervisor. Therefore, the importance of effective communication between the multidisciplinary health team stands out, with the purpose of developing a care plan for each person, according to their needs, thus guaranteeing comprehensiveness and quality care for this individual with PD [9].

For academics in the health area, communication, socialization, proactivity, empathy, resilience, among other skills were developed. In addition, group work, with sharing experiences and actions between professionals from different areas, enabled a view, reasoning and experience closer to the job market when it comes to working in a multidisciplinary team. Therefore, the present work can contribute positively to the academic scientific community, to the development and production of new studies in the area and improvements in the design of service to the target audience, as highlighted by Almeida and Castiglioni, 2007, in their study, about the importance of a multidisciplinary team in the treatment of individuals with Parkinson and parkinsonism[8].

CONCLUSION

The presence of a multidisciplinary team from Medicine, Nursing, Physiotherapy and Psychology courses in the extension project, carried out in a private higher education institution in Belo Horizonte, demonstrated its relevance in the context of the activities performed, namely: physical exercise, and talking circles, aimed at patients with PD. It was evident that these patients felt safer and more confident with everyone's work, making it possible to observe the improvement in the patients' quality of life, and motivating them to continue the treatment. Through the implementation of talking circles and available exercises, a notable enhancement was observed in the physical fitness and emotional well-being of patients. Additionally, participants and their companions reported a substantial increase in their knowledge about PD, providing positive feedback.

BIBLIOGRAPHIC REFERENCES

1. Haynes MT. Doença de Parkinson e Parkinsonismos. **The american Journal of medicine**, 2019; 132 (7): 802-807.

2. Freire BR, Cardoso FM. A atuação da Fisioterapia na qualidade de vida de pacientes com doença de Parkinson. **Fisioterapia Mov**. 2014 jan/mar; 27(1):57-66.

3. Gomes ABS et al. Benefícios do tratamento não farmacológico junto à levodopa no tratamento da doença de Parkinson Benefits of non-pharmacological treatment with levodopa in the treatment of Parkinson's disease. **Brazilian Journal of Development**, 2021; 7 (6): 56727-56740.

4. Silva TP, Carvalho CRA. Doença de Parkinson: o tratamento terapêutico ocupacional na perspectiva dos profissionais e dos idosos. **Cadernos Brasileiros de Terapia Ocupacional**, 2019; 27 (2).

5. Chahine L, Daniel T. Manejo dos sintomas não motores da doença de Parkinson. Uptodate, 2023 Jan 20.

6. Doença N, Parkinson D, Monteiro D, Rodrigues L, Lins O. RELAÇÃO ENTRE DISFAGIA E TIPOS CLÍNICOS The relationship between dysphagia and clinical types in Parkinson's disease , Maria das Graças Wanderley de Sales Coriolano. 2014;16(2):620–7.

7. OMS. 11/4 – Dia Mundial de Conscientização da Doença de Parkinson: avançar, melhorar, educar, colaborar! | Biblioteca Virtual em Saúde MS [Internet]. Saude.gov.br. 2023 [cited 2023 Apr 11]. https://bvsms.saude.gov.br/11-4-dia-mundial-de-conscientizacao-da-doenca-de-parkinson-avancar-melhorar-educar-colaborar/#:~:text=De%20acordo%20com%20a%20Organiza%C3%A7%C3%A3o,n%C3%BAmero%20pode%20dobrar%20at%C3%A9%202040. (accessed 2023 Apr 11)

8. Almeida MHM, Castiglioni MC. Recursos tecnológicos: estratégia de promoção do autocuidado, atividades e participação para pessoas com doença de Parkinson. **Revista de Terapia Ocupacional da Universidade de São Paulo** [Internet]. 2007 Dec 1 [cited 2023 Apr 12];18(3). https://doi.org/10.11606/issn.2238-6149.v18i3p152-157

9. Nascimento DDS et al. A multidisciplinaridade do cuidado em saúde frente ao mal de Parkinson. **SEMOC-Semana de Mobilização Científica-Alteridade, Direitos Fundamentais e Educação**, 2019.

10. De Melo Barbosa A et al. Efeitos de fisioterapia em grupo na função motora no parkinsonismo: Estudo quasi-experimental. **Fisioterapia Brasil.** 2022; 23 (6): 827–840.

11. Schenkman M et al. Effect of High-Intensity Treadmill Exercise on Motor Symptoms in Patients With De Novo Parkinson Disease: A Phase 2 Randomized Clinical Trial. **JAMA Neurol**. 2018; 75(2): 219.

12. De Santana TM; Kohlsdorf M; De Araujo TCCF. Suporte social e enfrentamento de pacientes com Doença de Parkinson e seus cuidadores familiares. **Psicologia Argumento**, 2020; 38 (101): 465-488.

13. Movement Disorder Society Task Force on Rating Scales for Parkinson's Disease. The Unified Parkinson's Disease Rating Scale (UPDRS): status and recommendations. **Movement disorders: official journal of the Movement Disorder Society**, 2003. *8*(7): 738–750. https://doi.org/10.1002/mds.10473

14. Rodríguez-Violante M, Cervantes-Arriaga A. A escala de classificação da doença de Parkinson unificada pela sociedade para distúrbios do movimento: usos clínicos e de pesquisa. **Arch Neurocien** [Internet], 2014; 19(3):157-63. Disponível em: https://www.archivosdeneurociencias.org/index.php/ADN/article/view/50

15. Aguiar JSG; Passos XS; Matsunaga NY. Métodos e instrumentos de avaliação do nível de atividade física em idosos brasileiros: Uma Revisão Integrativa. **Revista da AMRIGS**, Porto Alegre, 65 (4): 659-664, out.-dez. 2021.

16. Dalrymple-Alford JC et al. The MoCA: well-suited screen for cognitive impairment in Parkinson disease. **Neurology,** 2010 Nov 9; 75 (19): 1717-25.

17. Martins, BG et al. Depression, anxiety, and stress scale: Psychometric properties and affectivity prevalence. **Jornal Brasileiro de Psiquiatria**, 2019; 68 (1): 32-41. Disponível em: <http://hdl.handle.net/11449/189431>.

18. Pires S, Oliveira A, Parreira V, Britto R. Teste de caminhada de seis minutos em diferentes faixa etárias e índices de massa corporal. **Braz J Phys Ther** [Internet], 2007 Mar; 11 (2):147-51.

19. Novaes RD, Miranda AS, Dourado VZ. Velocidade usual da marcha em brasileiros de meia idade e idosos. **Revista Brasileira de Fisioterapia**, 2011; 15 (2): 117-122.

20. Andrade LCA et al.Timed Up and Go teste na avaliação do risco de quedas em idosos: uma revisão de literatura. **Research, Society and Development**, 2021. 10 (13).

21. Capato TTC, Domingos JMM, Almeida LRS. Versão em Português da Diretriz Europeia de Fisioterapia para a Doença de Parkinson. Omnifarma. 2015.