

# Parkinson's Disease: The occupational therapeutic treatment in the perspective of professionals and elderly

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**Abstract:** The world population aging has been happening fast and one of the great challenges of this century is the creation of strategies for quality of life and for the care of the elderly population that still presents a high prevalence of chronic degenerative and incapacitating diseases, among them the Disease of Parkinson. This qualitative study had as objective to know the interventions of the occupational therapist next to the elderly with Parkinson's Disease, as well as the conceptions of the elderly with Parkinson's Disease on the occupational therapy. Semi-structured interviews were conducted with eight occupational therapists attending elderly people with Parkinson's disease and six elderly with the disease. The data were analyzed through the thematic analysis proposed by Minayo. From this, the following categories emerged that guided the discussion: understanding about Occupational Therapy by the elderly; objectives of occupational therapy; evaluations, techniques, resources, and approaches in Occupational Therapy and the perception about the results of occupational therapy. It is concluded that the elderly have difficulty in understanding the profession, that there are differences between the conceptions of the elderly and the professionals in relation to the objectives of the treatment, the techniques and the methods used by the professionals were different, but mostly based in motor components, and that the efficacy of treatment is strongly related to the stage of the disease in which the elderly are and to their adherence to treatment.

**Keywords:** *Elderly, Parkinson's Disease, Occupational Therapy.*

## Doença de Parkinson: o tratamento terapêutico ocupacional na perspectiva dos profissionais e dos idosos

**Resumo:** O envelhecimento populacional mundial vem acontecendo de forma acelerada e um dos grandes desafios deste século é a criação de estratégias para manter a qualidade de vida e para qualificar o cuidado da população idosa, que apresenta uma elevada prevalência de doenças crônicas degenerativas e incapacitantes, entre elas a Doença de Parkinson. Este estudo de natureza qualitativa teve por objetivo conhecer as intervenções do terapeuta ocupacional junto aos idosos com Doença de Parkinson, bem como as concepções dos idosos com Doença de Parkinson sobre a terapia ocupacional. Foram realizadas entrevistas semiestruturadas com oito terapeutas ocupacionais que atendem idosos com Doença de Parkinson e seis idosos com a doença. Os dados foram analisados por meio da análise temática proposta por Minayo. A partir disso, surgiram as seguintes categorias que nortearam a discussão: compreensão sobre a Terapia Ocupacional por parte dos idosos; objetivos do tratamento terapêutico ocupacional; avaliações, técnicas, recursos e abordagens em Terapia Ocupacional e a percepção sobre os resultados do tratamento terapêutico ocupacional. Conclui-se que os idosos possuem dificuldade em compreender a profissão, que há divergências entre

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as concepções dos idosos e dos profissionais em relação aos objetivos do tratamento; as técnicas e os métodos utilizados pelos profissionais foram distintos, mas em sua maioria se deu com base em componentes motores; e que os resultados do tratamento estão fortemente relacionados à fase da doença em que o idoso se encontra e a sua adesão ao tratamento.

**Palavras-chave:** *Idosos, Doença de Parkinson, Terapia Ocupacional.*

## 1. Introduction

Global population aging is happening very fast and is likely to be one of the greatest public health challenges in the coming years. This phenomenon, which initially occurred in developed countries, is now increasingly perceived in developing countries. According to the Organização das Nações Unidas (2017), “[...] by 2050, Asia, Latin America, the Caribbean, and Oceania will have more than 18% of their population over 65 years old” [s.p.].

According to population estimates, Brazil had a total population of 206 million inhabitants in 2016, in which 14.3% were elderly people and life expectancy in this year was 75 years and 9 months old (INSTITUTO..., 2017). The increase in the elderly population in the country implies changes in both social and health demands, with the need for new strategies for health care and promotion, and for the formulation and implementation of public policies, aimed at enhancing autonomy and supporting the diverse demands of this population (LIMA; TOCANTINS, 2009; KUCHEMANN, 2012; MINAYO, 2012; VERAS et al., 2008).

Silva, Mourão and Gobbi (2015) point out that one of the great challenges for this century is the creation of strategies for the care of the elderly population with several particularities and also a high prevalence of chronic degenerative and incapacitating diseases.

Chronic degenerative diseases are characterized by the absence of regeneration of the affected systems and, because they develop a progressive and severe effect, cause suffering and wear to the elderly population. The second most prevalent neurodegenerative disease in elderly people is Parkinson's disease (PD), which affects 1 to 3% of this population (MONTEIRO et al., 2014). According to the World Health Organization, about 1% of the world's population is diagnosed with Parkinson's Disease, with an estimated prevalence of 100 to 200 cases per 100 thousand inhabitants. Approximately 10 million people worldwide have Parkinson's disease. In Brazil, there are not many statistical studies for PD, but it is estimated that 200,000 people are affected by the disease (ORGANIZAÇÃO..., 2014). The incidence

and prevalence of the disease increase with age. The incidence in the country in 2011 was approximately 3% and prevalence of 3.3% in patients aged 64 or over, 8.5% in individuals between 80 and 85 years old, and in those with over 85 years old, this index becomes 14.3%, with 36 thousand new cases per year in the country (PETERNELLA; MARCON, 2009; SOUZA et al., 2011).

The main symptoms of Parkinson's disease are tremor at rest, stiffness, deficits in balance and gait, bradykinesia and reduction of the range of movements. These motor disorders may lead the elderly person to social isolation, loss of will for activities they used to do, dependency to activities of daily living, loss of autonomy and consequently reduced the quality of life (FILIPPIN et al., 2014). Intellectual decline and cognitive disorders, such as concentration and memory difficulties for recent events, difficulties in calculations, and activities requiring spatial orientation may also occur. These changes usually intensify with the progression of the disease, especially in elderly people (ALMEIDA; CRUZ, 2009).

As Parkinson's disease is incurable and degenerative so far, the intervention process is complex and involves multiple professionals, aiming at the best possible conviviality of the patient with the disease. Functional deficits from the symptoms of Parkinson's disease alter the daily life of the person with the disease since they are increasingly performed slowly and require more effort. Thus, these elderly people may lose a sense of self-control, self-efficacy and often showing symptoms of depression (ALMEIDA; CASTIGLIONI, 2007).

In addition to the pharmacological treatment, multidisciplinary care is necessary to address all the issues that the elderly person with Parkinson's disease is experiencing so they can maintain better living conditions (STEIDL; ZIEGLER; FERREIRA, 2007). Rehabilitation treatments become increasingly more important with the disease progression and mainly include physiotherapy, occupational therapy and speech therapy (MÖLLER; MENIG; OECHSNER, 2016). Therefore, several professionals are involved in the process of treatment for the elderly person with Parkinson's disease, by the issues inherent in their

own aging, such as the prevalence of comorbidities, which requires the attention of different professionals, including the Occupational Therapist.

In a systematic review, Foster, Bedekar and Tickle-Degnen (2014) identified three major categories of occupational therapist intervention in PD. They are: exercise or physical activity (progressive resistance training, joint mobilization, stability and balance training, gait training); cues, stimuli, and objects to improve tasks and occupational performance (PD interventions to enrich or adapt the environment by enhancing the brain's responsiveness to environmental stimuli and the action context); and self-management and cognitive-behavioral strategies (individualized interventions focused on promoting wellness initiatives and personal control by helping participants improve their quality of life).

Murdock, Cousins and Kernohan (2015) report that PD significantly affects the capacity for involvement in an occupation and this occupation is the focus of occupational therapy. Focusing on the occupation, the quality of life improvement of people with PD is significantly obtained. For these authors, the experience focused on the occupation comprises the physical, psychological, social and spiritual areas with their related sub-themes.

The randomized study by Sturkenboom et al. (2012) evaluated the efficacy of occupational therapy in PD based on the Canadian Occupational Performance Model (COPM) and the Assessment of Motor and Process Skills (AMPS), which is an observational assessment allowing simultaneous assessment of motor, process and effect skills on an individual's ability to perform complex or instrumental and personal activities of daily living. This study concludes the positive impact of occupational therapy in this approach and considers that, in the case of PD, adaptations in instructions and training are necessary to use COPM.

In the international literature, there are studies published by occupational therapists on PD in more specific subjects such as: the effect of dance on PD (DUNCAN; EARHART, 2012; FOSTER et al., 2014), the ability of the person with PD to drive vehicles (DEVOS et al., 2016; ALVAREZ; SHERRILENE, 2016) and the use of virtual reality and games as a treatment resource (HOLMES et al., 2012; DANIQUE et al., 2017).

In Brazil, Almeida and Cruz (2009) pointed out that the occupational therapist aims to prevent and reduce functional losses and dependency of the elderly person with Parkinson's disease, basically

using technological devices, environmental changes, and adapted techniques. Their interventions include actions that exercise motor coordination, manual function, cognitive stimulation, relaxation and breathing techniques, compensatory activities and environmental adaptations, with interventions focused on remaining abilities.

According to Monzeli, Toniono and Cruz (2016), the intervention of occupational therapists in Parkinson's disease is based on mitigating the effects of the disease on the functional and/or psychosocial life of these individuals, focusing on the impact on the activities of daily living. According to Faria (2007), the occupational therapy intervention in the elderly person with Parkinson's disease includes the reorganization of the routine, aiming at activities considered more important for the elderly person, the stimulation of group exercises to encourage socialization, training of fine motor control and activities that favor postural stability and also the indication of safety equipment. These actions are always developed according to the stage of the disease and with the wishes of the patient.

Considering the studies of Monzeli, Toniono and Cruz (2016), Almeida and Cruz (2009) and Faria (2007) and the absence of other recent studies published by Brazilian occupational therapists in indexed journals, the need to the interventions of occupational therapists with the elderly person with Parkinson's disease, as well as the understanding of these elderly people about the interventions of occupational therapists were identified. No other national references were found after a direct search of the main national journals in the area of occupational therapy and also through other searches in the Lilacs and Scielo database using the keywords "occupational therapy" and "Parkinson's disease". In both cases, the period of ten years was considered.

Thus, this study aimed to know the interventions of the occupational therapist with elderly people with Parkinson's disease as well as the conceptions of elderly people with Parkinson's disease on occupational therapy.

## 2. Method

This qualitative study was developed through interviews with occupational therapists and elderly residents of the state of Rio de Janeiro from March to May 2017.

The inclusion criteria of professionals in the study were:

- a) To assist or have assisted at least two elderly people with Parkinson's Disease;
- b) To have at least one year of training in Occupational Therapy;
- c) To work in the city of Rio de Janeiro or in the city of Niterói.

The criteria for inclusion of the elderly people in the study were:

- a) To have Parkinson's disease diagnosed for any period of time;
- b) To be accompanied by an occupational therapist for at least 4 months.

The professionals were previously contacted at rehabilitation institutions that had occupational therapists in their professional settings and with the potential to attend elderly people with Parkinson's disease among their patients. The institutions were located through research on the websites of the health secretariats and also through the internet, searching for rehabilitation institutions. Also, the occupational therapists who attended private and/or home visits were contacted. They were located by appointment of the occupational therapists of the institutions, by a search on the internet and in virtual social networks. Through the confirmation of the occupational therapist regarding the inclusion criteria of the research and the agreement of their institutions, the interview was scheduled, usually in the professional's workplace.

The elderly people with Parkinson's disease were located through the institutions where they were treated. The interviews took place at the rehabilitation site of the elderly person, through the consent of the institutions.

Semi-structured interviews were carried out with 8 professionals and 6 elderly people from two different scripts.

Tables 1 and 2 show the characterization of the participants. Letters were given to the names in the case of the professionals and numbers were given in the case of the elderly people. In this way, it was sought to facilitate the understanding of some parts from the interviews transcribed throughout this work.

The interviews started after an explanation of the research, including its objectives. A tape recorder was used during each interview. The interviews were transcribed in full by the researcher. The interviews with the professionals had an average duration of

40 minutes. The interviews with the elderly person had a varied duration. The shortest interview had 6 minutes with the elderly woman 5, and the longest interview had 20 minutes with the elderly man 6 (Table 2). Although her interview lasted a few minutes, the elderly woman answered all the questions in the script.

The interview data were categorized and interpreted based on the thematic analysis technique. In the thematic analysis, the central concept is the theme and, according to Minayo (2013), it consists of separating the material to be analyzed in parts, categorizing it, describing the results of the categorization, inferring the data and interpreting the results examined with the assistance of theoretical reference.

For the development of this research, all the ethical measures provided for in Resolution CNS 466 of December 12, 2012, were taken. The research was submitted to the Brazil Platform and approved by the Ethics Committee of the University Hospital Clementino Fraga Filho of the Federal University of Rio de Janeiro (HUCFF/UFRJ) on 01/13/2017 and received the CAE number 61630416.6.0000.5257. All participants signed the informed consent form.

### 3. Results and Discussion

Four of the eight occupational therapists participating in the research worked in rehabilitation institutions, two assisting in private institutions, in offices and/or at home, and two worked in public hospitals. All were female and the average time of professional training was 11 years and 2 months. The most experienced professional had 34 years of graduation and the least experienced had 1 year and 5 months of graduation.

The elderly people with Parkinson's disease who participated in the study were six. Three were female and three were male. All were in treatment in the rehabilitation institutions. The mean age of the participants was 76 years and 2 months old. The oldest was 81 years old and the youngest was 70 years old. The mean time of treatment of these elderly people with occupational therapists was 8.2 months. The patient in treatment for the longest time had been treated for 1 year and the one with the least time had 4 months of treatment.

For the thematic analysis, the results were categorized as follows:

**The understanding of elderly people on occupational therapy** – Answers of the professionals on how they consider that the elderly people with Parkinson's disease understand the occupational

**Table 1.** Table characterizing the professional who participated in the research.

Professional	Time of graduation	Professional Insertion
Professional A	21 years	Public hospital
Professional B	1 year and 5 months	Rehabilitation Institution
Professional C	2 years and 7 months	Rehabilitation Institution
Professional D	15 years	Office and Home Care
Professional E	34 years	Public hospital
Professional F	6 years	Home Care
Professional G	2 years and 7 months	Rehabilitation Institution
Professional H	7 years	Rehabilitation Institution

**Table 2.** Table characterizing the elderly participants.

Elderly person	Age	Treatment time in occupational therapy
Elderly man 1	81 years old	10 months
Elderly woman 2	70 years old	4 months
Elderly woman 3	81 years old	9 months
Elderly man 4	74 years old	12 months
Elderly woman 5	74 years old	10 months
Elderly man 6	77 years old	4 months

therapy, as well as the answers of the elderly people on how their understand the occupational therapy.

**Objectives of the treatment** – Conception of the professionals about the objectives of the occupational therapy treatment with the elderly person with Parkinson's disease and the answers of the elderly people about their expectations with this treatment.

**Assessments, techniques, resources, and approaches in occupational therapy** – Techniques used by the professionals in the treatment of elderly people with Parkinson's disease.

**Perception of the results of the occupational therapy treatment** – Perceptions of the professionals and the elderly person about the results of the occupational therapy treatment.

### 3.1 Understanding about occupational therapy by elderly people

Five of the eight professionals participating believed that only after a certain period of treatment, the elderly person showed their understanding of the profession. Two of the eight professionals believed that the elderly person had no understanding of occupational therapy and still did not understand the profession even after treatment. One professional believed that the elderly person had a basic understanding of occupational therapy, but he often confused it with other professions.

[...] *I realize that most of them start the treatment without much awareness of what occupational therapy is and throughout the treatment they understand the profession better* (Professional E, 6 years of graduation).

*They do not know. They always say they are going to physical therapy. They are explained over and over and over and over again, but they always think they are entering physical therapy. They do not have much understanding of care* (Professional C, 2 years and 7 months of graduation).

The lack of understanding of the elderly people may be related with Carvalho (2012), who said in his study on professional identity, in which he reported that even the professionals have difficulty defining the profession and do it in long definitions, according to the author, they are often incomprehensible.

Regarding the answers of the elderly person, two of the six who participated in the study showed a reasonable understanding of occupational therapy, since in they associated the profession with the wellbeing and the improvement of the symptoms. Even though they could not explain or define the profession, they were able to report some actions performed by these professionals. Only one of the elderly showed that they did not have a minimum understanding of the profession since he could not describe it or explain it.

*What I understand is this: we come here practically neutral, right? We do not know what to expect, but the reception here is very good, the girl who takes care of us did it in a way that I consider here as a second family* (Elderly man 6, 77 years old).

Two of the three elderly people who demonstrated a better understanding of the profession talked about the goals of interventions by occupational therapists but did not name the profession.

*For my wellbeing. It's because I've improved a lot, even though I'm shaking, right? Because this is something that will not happen, we know. But this*

*treatment is to stop, not worsening, understand? I did not get worse, I'm better because we learn a lot here, do you understand? (Elderly woman 2, 70 years old).*

Only one elderly person showed a good understanding of the profession, including relating it to the improvement of movements and activities of daily living (ADL).

*For us to improve our movements, to learn something, right? How do you do something? They ask... Are you combing your hair right? What are you doing to comb your hair? Can you wear your clothes? Fortunately, thank God... this for me is still okay. I have difficulty, not easily, but I can get dressed, take a shower, you understand? (Elderly woman 3, 81 years old).*

The apparent lack of knowledge of the elderly person with Parkinson's disease on the treatment of the professionals who assist them shows the need for the occupational therapist to think about strategies aimed at clarifying the profession and its objectives.

### 3.2 Treatment objectives

All the occupational therapists interviewed reported that their objective was to reduce the rate of progression of physical limitations. In this sense, they sought to work the range of movement, to stimulate the passive and active movement of the limbs, to improve muscular strength, to guide postural changes, to train fine prehension, to improve overall motor coordination, and to prevent falls.

The objective reported by the professionals turns to the progression of the physical limitations and their distance from the perspective of the occupation and the model of occupational performance, since only the enabling and preparatory activities were mentioned, and not for occupation purposes.

The answers of the professionals corroborate with Almeida and Cruz (2009) who in their research, they said that although the occupational therapeutic objectives in Parkinson's disease include other aspects, they emphasize the maintenance of the balance, the range of movement and the motor coordination, for the maintenance of functional capacity.

Four occupational therapists reported that their initial objective was to survey the history of the elderly population, seeking to know about their daily lives, their difficulties, grievances, and occupations. This allowed the establishment of specific objectives according to the demand of each one. Only one participant clearly reported the need to create a

therapeutic link with the elderly person to chart treatment goals.

Castro (2007) reported that in the process of the clinical practice of the occupational therapist, a patient-centered practice is important, raising information and data about the contexts that surround them, defining the objectives aimed at enhancing the performance of the individual.

Concerning the need to make a survey about the history of the elderly person, one of the interviewed, professional A, with 21 years of graduation said:

*I hear the patient's complaint. His main complaint, what brought him there at the moment, what is it most bothering, what are his biggest losses in daily activities and from there I go to a program and elaboration of the work (professional A, with 21 years).*

It is important to identify the factors that influence the life of the elderly people, as these aspects may be crucial for understanding the course of the disease and for the search for treatment objectives that have meaning for the elderly person, favoring the planning of therapeutic interventions more directed to each one, respecting their particularities, demands and life history (PEREZ; ALMEIDA, 2010).

Motor dysfunctions are not the only barriers that influence the quality of life of people with Parkinson's disease, other issues such as emotional, cognitive and communicational factors may also be related to the course of the disease and to engagement and satisfaction in activities, which demand assessment and intervention (SILVA et al., 2010).

Four of the professionals interviewed mentioned other factors besides the motor aspect as objectives to be sought in patients with PD and another four of the interviewed professionals seemed to disregard these factors since they did not mention them in their answers. Among those who mentioned other factors, two answered to stimulate cognitive and socialization and two others said that they aimed at emotional issues, preventing a depression.

*I think in the first place for me I see the feelings of the person. Today I changed my way of working the strategy. Often I have to include a specific activity so that it loosens so that I can work on some prehension, range of movement, motor coordination, posture (Professional D, 15 years of graduation).*

*Enough cognitive activities also because they arrive quite disoriented. A temporal, spatial stimulation and also the socialization part (Professional C, 2 years and 7 months of graduation).*

Depression is one of the most prevalent conditions in elderly people with Parkinson's disease. Symptoms such as sleep disturbances, weight loss, memory impairment, loss of interest are common symptoms in patients with Parkinson's Disease (NAKABAYASHI et al., 2008). Studies have shown that depression is related to the damages that Parkinson's disease brings in activities of daily life, aggravating the quality of life of the elderly people (KOSTIC et al., 1994; HUANG et al., 2017).

Regarding the elderly interviewed, two of the six presented speeches revealing low self-esteem, shame or sadness for not being able to perform activities that they had before without any difficulty.

*[...] I would often get up from the table and go away for the shame of letting everything fall off my fork (Elderly man 4, 74 years old).*

*Because I learned many things that I did not know and that Parkinson's was so perverse to people (Elderly man, 1, 81 years old).*

These feelings may interfere in a significant way in the daily life of the elderly person with Parkinson's disease, requiring the care of the professionals also for the non-motor dysfunctions (FOSTER; BEDEKAR; TICKLE-DEGNEN, 2014). According to Almeida and Cruz (2009), the picture of depression is common in elderly people with PD and its intensity can range from mild to severe and may be a determinant of disability.

According to Aragon (2008), it is up to the occupational therapist to evaluate, identify and draw up a treatment plan together with his patient, so significant activities can be performed for this patient, since he has a potential role in his own treatment. All actions and the treatment plan should have the cooperation of the patient.

*In general, the main objectives are the prevention of falls, promotion of autonomy inside and outside the home environment and reduction of the speed of progression of physical limitations (Professional F, 6 years of graduation).*

*The objectives we try most are the things related to the motor coordination because the tremor is what bothers them the most to be able to do things, then we try more motor coordination [...] (Professional C, 2 years and 7 months of graduation).*

*Moving, cognitive work, I'm still not working in ADL [...] (Professional B, 1 year and 5 months of graduation).*

On the contrary, there is the speech of the elderly person:

*There are days when I have difficulty taking a shower, my bath is delayed. In food I shake, sometimes I delay. I have to eat with the spoon, if I put a fork, the food drops, and sometimes I lose the feel, the sensitivity. The legs get tired, they do not accelerate when I'm walking (Elderly man 6, 77 years old).*

Although all the elderly participants in the study clearly stated that they presented difficulties in activities of daily living (ADL) such as difficulty in wearing clothes and shoes, food, in general movements, that is, by focusing on the function, most occupational therapists emphasized less function and emphasized in their answers the components such as strength, joint amplitude, and balance. It was possible to identify a mismatch between the expectations of the elderly person and the goals of the professionals.

### 3.3 Assessments, techniques, resources, and approaches in occupational therapy

#### 3.3.1 Assessments

Occupational therapists use validated protocols and/or assessment guides from institutions to guide clinical thinking and guide their practice (ALMEIDA; CRUZ, 2009).

Five occupational therapists who participated in the research answered that they used standardized protocols as guidelines for their clinical practice and three said they used only the assessment of the sector in which they worked without the need for further evaluation.

The standardized evaluation most used by the study participants was the Lawton Index, which assesses the independence of instrumental activities of daily living (IADL) and it was used by three professionals. All of the following were used by only one professional: Parkinson's Disease Rating Scale; Parkinson Disease Questionary- 39 (PDQ-39); Barthel Index; Functional Independence Measure - FIM; Katz Index; Mini-Mental State Examination - MMSE; Canadian Occupational Performance Measure - COPM.

Only two of the seven different instruments cited by the research participants are specific for Parkinson's disease and except for the Lawton Index, all other instruments were used only by one of the professionals, indicating that there is no standard

regarding the evaluation instruments used in cases of elderly people with Parkinson's disease.

Important and specific assessment tools were not mentioned, such as the Hoehn and Yahr Scale used to determine the PD stage and the Unified Parkinson's Disease Rating Scale (UPDRS) covering other symptoms besides motor, including mental functioning, mood and social interaction, and the Scale of Parkinson's Disease Quality of Life (PDQL) that aims to measure physical and emotional health for those with PD.

### 3.3.2 Techniques, resources, and approaches

Regarding the techniques, resources, and approaches used, each interviewed occupational therapist, based on their answers, seemed to act according to their graduation and experiences in clinical practice.

Five of the occupational therapists participating in the research carried out individual approaches and three of them used the group resource.

*[...] we started a group, and the treatment was to start by studying what Parkinson was. We got a book that was written by a person who had Parkinson's and we studied. So we started doing a dynamic work based on the book, which mobilized many patients* (Professional E, 34 years of graduation).

The use of group as an occupational therapy treatment provides the person with Parkinson's disease improvements in their quality of life and functional independence, as well as reduction of physical and disabling symptoms. These authors also reported that group interventions, even if directed towards the motor and functional symptoms, should be aimed at improving socialization, motivation, interpersonal and family relationships, self-esteem and knowledge of the disease (GAUTHIER et al., 1987). Being in a group with others living with PD is beneficial for social participation and quality of life. Professionals should guide people with PD to community resources and to this type of social interaction (FOSTER; BEDEKAR; TICKLE-DEGNEN, 2014).

Almeida and Cruz (2009) observed in their research that people with PD after group rehabilitation maintained their level of functionality and demonstrated a decrease in bradykinesia and improvement of psychological wellbeing.

Monzeli, Toniono and Cruz (2016) highlighted two main forms of the intervention of the occupational therapist in Parkinson's disease, according to each

stage of the disease, one focused on activities of daily living, such as food and self-care, and another focused on the components physical and motor coordination.

Almeida and Cruz (2009) reported the work of the occupational therapist in the prescription of resources and devices that can facilitate the life of the individual, encouraging autonomy and inclusion.

The conceptions of the two authors mentioned above and their collaborators were present in the responses of occupational therapists. In the first, the investment in the adaptation of the guitar and the computer, and in the second, the consideration of the need for Assistive Technology.

*[...] this man that I am attending at that moment, I am initiating this treatment with him. He's a businessman, but he's very fond of music. He played guitar, so I'm rescuing the guitar with him. He cannot work on the computer because of his prehension, so I'm trying to adapt it, in the way it would be best for him to use it* (Professional D, 15 years of graduation).

*ADL training* (any daily activities that the patient is having difficulty performing, for example eating, cooking, brushing teeth, bathing, writing, going to the market, practicing a leisure activity, socializing, etc.). *If necessary, assistive technology features are introduced. Exercises of fine motor coordination, prehension, dissociation of movements, WMD and bilateral dexterity* (Professional F, 6 years of graduation).

The focus of occupational therapy interventions is on motor deficits, basic self-care, cognitive and psychosocial issues, and activities in occupational areas, such as instrumental activities of daily living, work and social participation (FOSTER; BEDEKAR; TICKLE-DEGNEN, 2014).

Five occupational therapists participating in the research acted on the motor deficits of the elderly with PD and reported interventions such as exercises to improve active limb movement; the use of rhythmic movements to control tremors; the use of weights to stabilize the limb; muscle stretching; proprioceptive stimulation; extensive exercises for balance training, motor coordination and range of movement; prehension exercises, such as the use of planks with clothes fasteners and elastic boards; exercises to improve gait.

*In terms of technique, I use a lot of stretching, a lot of proprioceptive work, a lot of prehension work. It was something that we were seeing with a good result, gave a balanced in the tone. I use*

*a lot of ample activity, although some moments I need fine activities even to preserve the writing and the most delicate activities* (Professional E, 34 years of graduation).

Monzeli, Toniono and Cruz (2016) also reported in their study the use of exercises to stimulate the proprioceptive system, to improve the reach and prehension motor components, such as motor coordination and stretching exercises.

Almeida and Cruz (2009) also reported that occupational therapists act on motor deficits, using exercise practice to maintain motor coordination, balance, and range of movement.

Interventions stimulating cognitive and psychosocial issues were reported by four of the participants in this study. Playing games to stimulate memory, the use of artistic activities, such as mosaic, to stimulate cognitive functions, and free activities to stimulate socialization were among these interventions mentioned.

*I use art a lot... art in several forms, so I use figures, I use paint, tissue paint, I do a lot of painting work on a towel* (Professional D, 15 years of graduation).

*We do a lot of cognitive activities, a lot of jigsaw games so they have a sense of what's underneath what's up there, where they put it on the side, towards those things that they feel a little lacking* (Professional C, 2 years and 7 months of graduation).

Even though elderly people with Parkinson's disease do not present intellectual decline, more advanced stages of the disease may present deficits in concentration and memory causing discomfort and concern for the family. It is necessary to be aware of non-motor dysfunctions (FOSTER; BEDEKAR; TICKLE-DEGNEN, 2014). Thus, it is necessary for occupational therapists to stimulate cognitive aspects, using resources for memory training and related functions (ALMEIDA; CRUZ, 2009).

Three of the eight therapists participating in the research reported that in their professional practice they used resources such as body relaxation techniques; respiratory training; work with music; and facial mime work in the mirror to stimulate expressions.

*I start with the techniques of body relaxation and respiratory work, we use music as a resource, music brings pleasure, within a process of stimulating pleasure, taking away melancholy, depression* (Professional A, formed 21 years ago).

*Sometimes we do body work on the floor. Sometimes we would make them lie down on the floor and draw, they would make a contour of each one and then fill the body* (Professional E, 34 years of graduation).

The use of adaptations for the elderly person to perform their ADL was a feature used by six of the occupational therapists participating in this study who reported that the adaptations made the patients more independent. They also cited the use of an environmental accessibility evaluation to check for risks of falls; suggestions for adaptations aimed at safety and greater independence, such as the use of adaptations at home, food, self-care materials, and the workplace.

*I have also made adaptations in cutlery, plates, cups, all this I have made adaptations* (Professional D, 15 years of graduation).

*The two ladies have a lot of questions about wanting to cook again, so we try to adapt something of this kind even though it's harder with us inside the institution* (Professional C, 2 years and 7 months of graduation).

In this same sense, Faria (2007) says that with the progression of the disease, the occupational therapy intervention is focused on the adaptation of the environment, aiming to prolong the independence of this patient. The author reported on the use of adaptations of activities that require fine motor control, such as self-care tools; the use of security equipment installations, like changes in furniture to prevent falls.

Guidance, functional training, and activities of daily living were reported by six occupational therapists who reported on guidelines such as sitting and getting out of bed, putting on and taking off the blouse, eating and cooking alone, brushing teeth, bathing, writing, going to the market, practice a leisure activity. Therefore, although some professionals did not mention the ADLs as objectives, it was possible to observe from the answers that these were referred to as strategies.

*We use the functional dependency room to train even the real one of sitting and getting up in bed to put on and take off the blouse and what the patient brings [...]* (Professional G, 2 years and 7 months of graduation).

*[...] Let's make a fruit salad? Let's make a cake? So sometimes we would have a snack. Then it was the moment that I could see how they were in the knife, the fork, the spoon, the whole movement, how they feed* (Professional E, 34 years of graduation).

Regarding the guidelines and training of ADL, Foti (2005) said that after the occupational therapist evaluates the physical, psychosocial and environmental components, it is up to the occupational therapist to perform daily life activities. The above-mentioned author reported that during the daily life activities, the therapist interacts with the patient, so it may be possible to discover the patient's attitudes and feelings towards that specific activity being trained, as well as the priority in social, family and personal training, and values and customs in relation to the performance of daily life activities.

The multidisciplinary approach was an aspect mentioned by all participating professionals as crucial for the improvement of the clinical picture of the elderly person. But only three professionals performed actions with other professionals.

*Yes. I had a speech therapist partner who helped us a lot even because of the speech that is greatly impaired. The speech, the swallowing of this patient, because the muscles are also affected. Some work with a physiotherapy, more focused on the respiratory if there is some respiratory involvement, some history of associated complication and thus, the doctor who has a relation of exchange that, even to signal some interurrences, some important information, so we can do our work (Professional A, 21 years of graduation).*

*I do not usually interact much with the other professionals who attend my patients, unfortunately, but in the few exchange opportunities I had, the results were great. Also, the performance of other professionals with the same patient makes the treatment much more effective (Professional F, 6 years of graduation).*

*I think this exchange is great for the patient. Sometimes our reality is not so much for the short time we have here and for the fact that the times sometimes do not match, but I believe it is valid and necessary (Professional G, 2 years and 7 months of graduation).*

According to Melo et al. (2014), even though treatment with occupational therapy plays a significant role in independence and autonomy in activities of daily living, the elderly people need the care of other health professionals to meet their diverse demands. In this sense, the absence of a more integrated work with other professionals by the research participants was an important factor, although the reasons for this absence were not clarified.

The study by Cohen et al. (2016) examined the results of an inter-professional education program

in PD and team-based care for medicine, nursing, occupational therapy, physiotherapy, music therapy and speech therapy, and concluded that the program showed positive gains not only in knowledge of PD but also in team strategies, resulting in best practices.

All participating occupational therapists stated that they had contact with relatives and/or caregivers, and they answered that they believe that this contact is fundamental for treatment, especially because this family member is part of the elderly's daily life.

*I always try to talk to family members, especially at the beginning of treatment and over time. I seldom mark a specific session, I often invited them to enter a part of the service and explain the activities, the objectives. It is very common to end up also raising doubts of the relatives in relation to the disease, to the treatment and to indicate some other professional (Professional F, 6 years of graduation).*

*Contact is daily. [...] I leave them very comfortable to contact me (Professional D, 15 years of graduation).*

*Right from the beginning, we cannot do any work without involving the family, caregiver, right? (Professional A, 21 years of graduation).*

Occupational therapists rely on family support for successful treatment. Success in managing PD depends a lot on the partnership with the individual, his family members, and caregivers. In this sense, orientations are given to family members and caregivers to minimize the impacts arising from the disease progression, not only in relation to the procedures performed, but also to the disease itself, its progression and the physical, emotional and behavioral changes that the elderly person experience (ALMEIDA; CRUZ, 2009).

### 3.4 Perception of the results of occupational therapeutic treatment

Murphy and Tickle-Degen (2001) emphasized the need for evidence demonstrating the efficacy of occupational therapy interventions to sustain treatment. In this sense, the occupational therapists participating in the study evaluated the results of their interventions based on the improvement presented by the elderly patient in some components, such as muscular strength, dexterity, self-esteem, and also to identify the time elapsed for this improvement.

Some factors such as disease stage and adherence to treatment were reported as aspects of great interference for treatment efficacy. Five of the interviewed professionals pointed out that the improvement and the perception time of the improvement were related to the stage of the disease. An occupational therapist reported that adherence to treatment is linked to their results.

When questioned about the perception of treatment outcomes, each occupational therapist responded according to the severity of the disease symptoms of those who take care. An occupational therapist reported having observed better control of the clinical picture of patients whose symptoms are still unilateral, from two months; three occupational therapists reported that they observed greater control in the progression of the disease in patients whose symptoms are bilateral and already include the beginning of the motor difficulties, from four months; and two occupational therapists affirmed that they observed improvement in the control of the symptoms of patients in more advanced phases, when there are already important motor difficulties, from six months.

*Depending on the stage of the disease, in the case of this lawyer woman who was sent very fast, we have a good return, in 2 months she was already returning to work, she was rejoining the techniques, the guidelines of her self-care, her independence at work, even though she still needs the caregiver's help, right? (Professional A, 21 years of graduation).*

*In this place, I saw improvement from 4 months we were able to gather a lot of things related to motor coordination (Professional C, 2 years and 7 months of graduation).*

*In a more severe patient I think that at 6 months you can already see a relief of the symptoms, it is as if the patient arrived with very great weight and you were able to soften, so he can do better what he already did (Professional E, 34 years of graduation).*

This change in the time of observation of the treatment result appears to be related to the evolution of the disease since Parkinson's disease is a chronic degenerative disease and the elderly population are the most affected progress.

Participating occupational therapists reported that the improvements observed were in physical and motor aspects: improvement in muscle tone, balance, dexterity, prehension; emotional, social and behavioral aspects: improvement of self-esteem, social independence, improvement in mood and

memory, and better understanding of the disease, and independence in ADL and daily activities.

*The main improvements observed are related to the performance of ADLs worked and the reduction of falls (Professional F, 6 years of graduation).*

*Despite the diagnosis and we also observe the will to live, many were depressed, without perspective and when the OT arrives, providing an adaptation, a home orientation, reorganizing his tasks, he returns to the activities and we see a very good improvement (Professional A, 21 years of graduation).*

*I think that in ADL and in food, the most noticeable improvements are of cutting alone, of eating in places, in restaurants. There is also an improvement in balance, in strength (Professional G, 2 years and 7 months of graduation).*

Only one of the six elderly patients did not present many improvements and five elderly patients reported improved symptom control for physical aspects, emotional issues and socialization, and for ADL (greater independence in food, clothing, and writing).

All of them stated that they like the treatment of occupational therapy, because they interact with other elderly people and professionals, and learn to carry out their occupations in different ways.

*[...] I could not go to the restaurant because I did not hold the spoon, dropping everything. Before reaching the mouth, everything falls. Not today, I stand firm and everything. And I feel happy. No one complains any more (Elderly man 4, 74 years old).*

*I've had improvement on one side and nothing on the other. Once you are well and the other time you are bad (Elderly man 1, 81 years old).*

*A lot of improvement. Both physical and spiritual. We leave here with our souls washed. The attention they give us in moments seems to belong to the family [...]. I love it immensely (Elderly man 6, 77 years old).*

*I have improved, I have improved a lot, yes. I really like it. And I'm asking to get the day to come here, that we distract, we have conversations, right? (Elderly woman 2, 70 years old).*

The interventions performed by occupational therapists are aimed at reducing functional losses by providing the elderly patient with a better quality of life. Their approaches aim to help the elderly person

in a positive way to carry out their occupations in a more autonomous and independent way during the course of the disease (ALMEIDA; CRUZ, 2009).

## 4 Final Considerations

This research enabled to know the interventions of the occupational therapist with the elderly person with Parkinson's disease as well as the conceptions of the elderly person with Parkinson's disease on occupational therapy.

Although the elderly person values the care given by the occupational therapist, they still have difficulty in understanding the profession, since they cannot distinguish them from others and not even name it. This fact reflects a need for occupational therapists to use different strategies to facilitate understanding of the profession, its methods, and techniques by those who are the target of its interventions.

Differences between the conceptions of the elderly person and the professionals regarding the objectives of the treatment were also evidenced. The elderly person expects mainly improvement in their daily activities and in their daily lives and most of the professionals responded to aim for improvement mainly in the motor aspects and to a lesser degree in the performance of the ADL as an objective, although the improvement in the function and in the ADL was sought. Non-reference to ADL as an objective, despite its broad approach, pointed out the need for recognition and valorization of this practice by the category, so this may be part of its discourse. The testimonies of the elderly participants of the study demonstrated the importance of ADL and occupational therapists.

There was an important distinction for the evaluative methods used and, although available, specific instruments for PD evaluation were rarely used. The techniques and methods used by professionals were very consistent with the results found in previous studies and they were shown to be diversified. The perception of the results of the treatment was strongly related to the stage of the disease in which the elderly people were well and to the time elapsed from the beginning of the treatment.

By the search for references in the theme, a shortage of specific national publications on how occupational therapy is given was observed. The need for further studies in the area is remarkable, as the elderly population is growing significantly, increasing the possibility of developing chronic degenerative diseases in this population.

A relevant limitation of the study that all the elderly patients interviewed were from the same rehabilitation institution, which prevented not only the analysis of the conceptions of the elderly individual in different forms of occupational therapy, such as public hospitals and private and home care, but also compromised the discussion between the conceptions of the elderly individual and the professionals about the treatment from a comparative perspective.

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### **Author's Contributions**

Thaiane Pereira da Silva conducted the interviews of the research under Claudia Reinoso Araujo de Carvalho guidance. The two authors jointly developed all the other stages of the manuscript and approved the final version of the text.