Occupational performance skills in Parkinson's disease: relationship with health-related quality of life and caregiver burden

Jorge Alegre-Ayala, Lydia Vela-Desojo, Diego Fernández-Vázquez, Víctor Navarro-López, Yolanda Macías-Macías, Roberto Cano-de-la-Cuerda

Background. The progression of Parkinson's disease (PD) results in a loss of ability to performance activities of daily living and health-related quality of life. The objectives of this study were to establish the relations between occupational performance skills and health-related quality of life, and the degree of caregiver burden in PD patients.

Patients and methods. Forty-nine patients at different stages of PD according to the Hoehn and Yahr scale participated in the study. Patients were assessed using the Parkinson's Disease Questionnaire (PDQ-39), the EuroQoL (EQ-5D), the Assessment of Motor and Process Skills (AMPS), and the Zarit Caregiver Burden Interview (ZCBI).

Results. Strong correlations were found between the motor skills section of the AMPS scale and the PDQ-39 (r = –0.76; p = 0.001), and the EQ-5D questionnaires (r = 0.72; p = 0.001), while moderate correlations were found with the process skills. AMPS process skills were moderately correlated with mobility and activities of daily living. The ZCBI was only weakly correlated with the AMPS motor skills (r = –0.34; p = 0.02).

Conclusion. Declining scores on the AMPS scale are closely related to the loss of health-related quality of life in PD patients, and, to a lesser extent, with the degree of caregiver burden.

Key words. Activities of daily living. Assessment of motor and process skills. Caregiver burden. Functionality. Health related quality of life. Parkinson's disease.

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Accepted:
15.06.23.

Conflict of interests:
The authors declare no conflicts of interest.

How to cite this article:
Alegre-Ayala J, Vela-Desojo L, Fernández-Vázquez D, Navarro-López V, Macías-Macías Y, Cano-de-la-Cuerda R. Occupational performance skills in Parkinson's disease: relationship with health-related quality of life and caregiver burden. Rev Neurol 2023; 77: 3-11. doi: 10.33588/rn.7701.2023097.

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Introduction

Parkinson's disease (PD) is the second most common neurodegenerative disease after Alzheimer's disease. PD is characterized mainly by the presence of motor symptoms, and also of non-motor symptoms, such as hyposmia, constipation, behavioral, sleep and emotional symptoms, or even dementia [1]. As the disease progresses, the ability to perform occupations becomes greatly affected, along with a progressive increase in dependence on others to perform daily tasks. All of this translates into detrimental consequences for the health-related quality of life of PD patients [2]. Health-related quality of life in PD has been widely studied showing that patients with PD have a worse health-related quality of life than the general population and, in many cases, also in comparison with other chronic pathologies [2].

Regarding the clinical aspects of PD, the severity of the disease, defined by the Hoehn and Yahr (HY) scale stages, is one of the factors that most influences the health-related quality of life [3]. Other factors such as the duration of the PD, the earliest onset of the disease, cognitive compromise and presence of symptoms that do not respond to levodopa, are also noted as predictors of poor health-related quality of life [4,5]. Gait and motor disturbances are also considered to be the major motor factors to strongly influence health-related quality of life. Non-motor symptoms such as depression, are the most important factors influencing health-related quality of life [4,6]. Other factors, such as fatigue, cognitive impairment, apathy, pain, sleep disorders, or anxiety also seem to have a prognostic value, although not as relevant as the depressive symptoms [7].

Caregiving in people affected by PD is usually performed by informal caregivers, especially by partners. Care-given is closely related to high levels of stress and has a strong impact on the psychosocial sphere of caregivers; in fact, caregiver burden is the strongest predictor factor for institutionalization in PD [8]. A study reported that most important predictors of caregiver burden in people with PD are the degree of disability of the disease, the

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presence of psychiatric, cognitive disorders and patient's mood, and the caregiver's level of psychosocial well-being [9,10], being related to disease progression [11].

Nevertheless, there is a lack of knowledge about the specific skills that are necessary to perform occupational tasks in PD [12,13]. Occupational performance skills are the motor actions perceived as the person moves and interacts with the environment in different contexts [14]. Process skills are defined as the ability to plan, control, adjust and modify the actions to perform daily tasks [15]. To our best knowledge, no studies have been published evaluating the relationships between occupational performance skills with health-related quality of life loss and caregiver burden in patients with PD. Therefore, the objectives of this study were to establish the relations between occupational performance skills and health-related quality of life, and the degree of caregiver burden in a group of PD patients.

Patients and methods

Design

An observational study was conducted. STROBE (*Strengthening the reporting of observational studies in epidemiology*) guidelines were followed to standardize the reporting of this work. The study was approved by the local Ethics Committee (reference: 10/79; 2-11-2010). An informed consent was obtained from each patient prior to their inclusion in the study, in accordance with the 1964 Declaration of Helsinki.

Participants

Patients with PD were recruited from the Movement Disorders Division of the Hospital Universitario Fundación Alcorcón. Patients included in the present study had to meet the following inclusion criteria: a) diagnosis of idiopathic PD according to the United Kingdom Parkinson's Disease Society brain bank [16]; b) be in HY stage II, III or IV [17]; c) have a stable or slightly fluctuating motor response to pharmacological treatment; and d) have the cognitive ability to understand the instructions provided in the tests. Patients were excluded if: a) scored less than 26 points on the Montreal cognitive assessment [18]; and b) had any other condition that could limit their functional capacity, such as trauma or oncologic conditions.

Procedure and outcome measures

After signing informed consent, all patients were evaluated by a neurologist specializing in movement disorders in the on phase of medication, within two hours of the administration of anti-parkinsonian medication, as this is the period during which patients do most of their daily activities.

Unified Parkinson's Disease Rating Scale (UPDRS), part III (motor), HY stage, Schwab & England activities of daily living scale, the Parkinson's Disease Questionnaire (PDQ-39) and the EuroQoL (EQ-5D), and levodopa equivalent daily dose were recorded:

The UPDRS is the most commonly used scale in the evaluation of PD patients. This scale has several sections. The UPDRS III (motor function) was used in this study. It evaluates speech, facial expression, tremor at rest, action tremor, rigidity, finger taps, hand movements, rotation of the hands and forearms, leg agility, rising from a chair, posture, gait, postural stability and bradykinesia with a final score in this section [19].

HY stage was used for the staging of the functional disability associated with Parkinson's disease in the sample. It describes the progression of the disease through various stages (1 to 5), to measure the severity of the case [17].

Schwab & England activities of daily living scale assesses the ability to perform daily activities in term of speed and independence through a percentage figure. The rating can be determined by the professional or by the PD patient, with values from 100% (indicating total independence) to 0% (state of complete dependence) [20].

PDQ-39 was the first specific instrument for evaluation of the health-related quality of life in PD patients and comprises 39 questions with five multiple-choice answers related to the frequency of the disease manifestation. The answers refer to the impact of the illness on the patient's life in the previous month, as had been explained to the patient before the interview. The 39 questions are divided into eight dimensions: mobility (10 questions), activities of daily living (six), emotional well-being (six), stigma (four), social support (three), cognition (four), communication (three), and bodily discomfort (three). The score for each question ranges from zero (0) to four (4): never = 0; occasionally = 1; sometimes = 2; often = 3; always = 4. Each dimension score ranges from 0 to 100 in a linear scale, in which 0 is the best and 100 the worst quality of life [21,22].

EQ-5D is a multidimensional preference scale with a total summary score on global quality of life.

It is a generic instrument that is self-administered, and it is comprised of five dimensions of health status (mobility, self-care, pain, role function, anxiety and depression). The EQ-5D also includes a visual analogue scale on which patients rate their own health between 0 and 100, thereby providing an overall numeric estimate of their health-related quality of life [23].

The second phase of the study was conducted in each patient's home. An occupational therapist asked patients to perform two tasks of daily living, according to their functional status, which were assessed by the Assessment of Motor and Process Skills (AMPS) between one and two hours after the first dose of medication. In addition, caregivers were administered the Zarit Caregiver Burden Interview (ZCBI):

AMPS is a scale designed to analyze the quality of occupational performance via the assessment of the safety, efficiency, effort and independence with which everyday tasks are performed [24]. The use of the AMPS has been recommended in older people due to its sound psychometric properties and appropriate sensitivity to change [25]. The motor and process skills detailed in this scale have been shown to be reliable indicators of the level of independence in the community [26]. This scale is based on observation in order to measure the motor and process skills used in the performance of two activities and to determine how these affect the performance of activities of daily living, thus enabling an estimation of the level of independence in the person's community. The person to be analyzed must perform two tasks (from a total of 125 standardized tests). The administration and scoring of this scale require between 30 and 60 minutes. Each task analyses 16 types of motor skills and 20 process skills, which are scored for their quality of performance in four values (competent, questionable, ineffective, and markedly deficient). Lastly, two scores are provided, one for the motor section, and another for the process section, with cut-off points at 2.0 and 1.0, respectively.

The ZCBI consists of 22 items rated on a 5-point Likert scale from 0 (never) to 4 (almost always), with a range of scores from 0-88. Higher scores indicate greater burden. A score of 17 or higher is considered a high overburden. The ZCBI was developed as a unidimensional measure of overburden. The ZCBI includes consequences of caregiving, patient dependence, burnout and uncertainty, guilt or self-criticism, shame/anger or frustration, psychological burden and emotional reactions, personal stress, and role strain. The psychometric properties of the ZCBI have been extensively examined in caregivers of patients with dementia and demonstrate strong evidence of reliability and validity in that population [27].

Statistical analysis

Data were analyzed using the SPSS statistical programme (SPSS Inc., Chicago, IL; version 27.0). The Shapiro-Wilk's W-statistic was used to screen data for normality of distribution. The confidence interval used to establish statistical significance was set at 95%. Pearson and Spearman's correlation coefficients were used to determine the degree of correlation between the different variables. The Kruskall-Wallis nonparametric test was used to determine the relationship between HY stage, the health-related quality of life measure and the caregiver burden. Correlation coefficients between 0 and 0.3 were considered as small; between 0.3 and 0.7, as moderate; and greater than 0.7, as large [28].

Results

The study included 49 patients with PD (54.1%, women), with a mean age of 72.45 ± 8.6 years. Twenty patients were in HY stage II (40.8%), 13 in stage III (26.5%) and 16 in stage IV (32.7%). The HY scale ranged from 2 to 4. Disease duration was 10.58 ± 6.19 years, and levodopa equivalent daily dose was 845.25 ± 340.28 mg. Mean scores on the UPDRS section III were 35.02 ± 10.76, and on the Schwab & England were 69.58 ± 13.04. The demographic and clinical variables of the patients are shown in table I. The mean scores of the scales divided by HY scores are shown in table II.

Correlation between PDQ39, EQ-5D and ZCBI with HY, UPDRS III, AMPS motor skills and AMPS process skills are shown in table III.

Correlations between AMPS with PDQ-39, EQ-5D and ZCBI

Regarding relationships between the AMPS scale and the PDQ-39, high correlations were observed with motor skills (r = –0,76; $p < 0.001$), and moderate correlations with process skills (r = –0,0.51; $p < 0.001$) (Figure). Regarding relationships between the AMPS and the EQ-5D, high correlations were observed with motor skills (r = 0.72; p = 0.001), and moderate correlations with process skills (r = 0.53; p = 0.001). Between the AMPS and the percentage

Table I. Demographic and clinical variables.

	Mean ± SD	Range
Age	72.45 ± 8.6	47-89
Male (%)	23	46.9%
Female (%)	26	53.1%
PD evolution (years)	10.58 ± 6.19	2-30
HY (%)		2-4
II HY (%)	20	40.8%
III HY (%)	13	26.5%
IV HY (%)	16	32.7%
LEDD	845.25 ± 340.28	200-1.590
UPDRS III	35.02 ± 10.76	15-56
Schwab & England	69.58 ± 13.04	30-80
MoCA	26.49 ± 2.07	26-30

HY: Hoehn and Yahr scale; LEDD: levodopa equivalent daily dose; MoCA: Montreal Cognitive Assessment; SD: standard deviation; UPDRS III: motor section of the Unified Parkinson's Disease Rating Scale.

of perceived health, correlations were weak with both motor skills (r = 0.40; p = 0.004) and process skills (r = 0.44; p = 0.002). Between the AMPS and the ZCBI questionnaire, a weak correlation was observed with the motor section of the scale (r = –0.34; p = 0.026). No correlation was found with the process skills (r = –0.15; p = 0.33).

Correlations between HY and UPDRS III with PDQ-39, EQ-5D and ZCBI

Between the HY and the PDQ-39, high correlations were observed (r = 0.8; p < 0.001). Also, the HY score and the EQ-5D showed high correlations (r = 0.8; p < 0.001). Between the HY and percentage of perceived health, correlations were weak (r = 0.44; p = 0.002). Between the HY score and the ZCBI, a weak correlation was observed (r = 0.41; p = 0.007).

Between the UPDRS III and the PDQ-39, a moderate correlation was observed (r = 0.65; p < 0.001). Also, between the UPDRS III score and the EQ-5D, a moderate correlation was observed (r = 0.63; p < 0.001). Between the UPDRS III and the percentage of perceived health, a weak correlation was found (r = –0.38; p = 0.008). Finally, a weak correlation was observed between the UPDRS III score and the ZCBI (r = 0.4; p = 0.009).

Discussion

Our study shows high to moderate correlations were found between quality of life and motor and process skills section of the AMPS and a weak correlation was observed with the motor section of the AMPS scale in PD patients. To date, very few studies have used the AMPS scale and studied its relationship with aspects of health-related quality of life and caregiver burden in people with PD.

A prior study conducted by our research group studied the relationship between PD severity (HY and UPDRS III) and the loss of functional performance assessed with the AMPS scale [29]. Other previous investigations that analyzed the effect of occupational therapy interventions in PD, the PDQ-39 and EQ-5D questionnaires were used, and correlations were found with several functional scales other than the AMPS [30,31]. But, in our best knowledge, this is the first study that explores the relationship between AMPS scale with aspects of health-related quality of life and caregiver burden in people with PD.

The results of our study show that the task-based performance scale not only serves to measure functional status, but this information is related with quality of life in PD patients. The mobility and activities of daily living dimensions of the PDQ-39 scale presented the strongest associations with the process and motor skills, with a weaker association found between motor skills and the bodily discomfort domains, and with the emotional well-being section. Further, a weaker association was also found between process skills and the communication domain, and with the emotional well-being section.

The loss of ability to perform daily tasks, detected through the AMPS scale, is closely related to the decrease in health-related quality of life assessed by the EQ-5D in patients with PD. What is most relevant is that this association is strongest between the motor section of the AMPS scale and the EQ-5D total score, although a moderate relationship was also found between the EQ-5D total score and the percentage of perceived health in the EQ-5D, and moderate correlations was observed between the process skills and the EQ-5D total score and the percentage of perceived health, showing a connection

Table II. Scores of PDQ-39, EQ-5D, ZCBI and AMPS based on HY stage[a].

	II HY; *n* = 20	III HY; *n* = 13	IV HY; *n* = 16	Total; *n* = 49
PDQ-39 total	17.25 ± 10.39 (2-41)	37.31 ± 18.94 (12-73)	65.07 ± 17.89 (31-99)	37.62 ± 25.45 (2-99)
Mobility	11.7 ± 12.46 (0-42)	39.08 ± 24.48 (10-82)	72.67 ± 17.63 (42-95)	38.17 ± 31.41 (0-95)
ADL	10.7 ± 10.4 (0-37)	27.62 ± 19.71 (0-66)	52.27 ± 25.87 (4-95)	28.27 ± 25.64 (0-95)
Emotional well-being	11.5 ± 11.19 (0-45)	27.92 ± 22.72 (4-79)	34.33 ± 16.7 (8-70)	23.08 ± 19.22 (0-79)
Stigma	4.9 ± 9.5 (0-31)	6 ± 9.61 (0-25)	8.53 ± 11.34 (0-31)	6.33 ± 10.04 (0-31)
Social support	3.25 ± 6.73 (0-25)	0 ± 0 (0-0)	12.53 ± 15.49 (0-41)	5.27 ± 10.77 (0-41)
Cognition	15.6 ± 12.33 (0-37)	16.54 ± 11.49 (0-31)	23.2 ± 16.42 (0-50)	18.23 ± 13.68 (0-50)
Communication	5.6 ± 5.86 (0-16)	8.23 ± 10.2 (0-25)	21.6 ± 23.28 (0-66)	11.31 ± 15.88 (0-66)
Bodily discomfort	20.1 ± 18.71 (0-58)	29.77 ± 19 (0-66)	48.13 ± 17.8 (25-83)	31.48 ± 21.73 (0-83)
EQ-5D total	0.88 ± 0.16 (0.41-1)	0.72 ± 0.16 (0.42-1)	0.31 ± 0.14 (0.11-0.59)	0.65 ± 0.29 (0.11-1)
EQ-5D VAS	66.84 ± 16 (40-100)	50 ± 12.24 (20-70)	48.75 ± 17.55 (10-80)	56.25 ± 17.61 (56.25-17.61)
ZCBI	17.58 ± 14.5 (1-64)	23.08 ± 16.31 (4-57)	33.6 ± 15.59 (4-62)	23.1 ± 16.26 (1-64)
AMPS motor skills	1.44 ± 0.36 (0.52-2.03)	0.86 ± 0.41 (0.27-1.56)	–0.25 ± 0.98 (–2.11-1.44)	0.73 ± 0.96 (–2.11-2.03)
AMPS process skills	1.19 ± 0.25 (0.59-1.59)	0.92 ± 0.39 (0.11-1.28)	0.49 ± 0.72 (–1.44-1.69)	0.89 ± 0.56 (–1.44-1.69)

ADL: activities of daily living; AMPS: Assessment of Motor and Process Skills; EQ-5D total: EuroQol total score; EQ-5D VAS: EuroQol visual analogue scale; HY: Hoehn and Yahr scale; PDQ-39: Parkinson Disease Questionnaire; ZCBI: Zarit Caregiver Burden Interview. [a] The data are shown in mean ± standard deviation (range).

between these constructs. These aspects have been reflected as two of the main factors contributing to decreased quality of life in PD [32-34]. Even in the early stages of PD, motor symptoms, stiffness and, especially, postural instability and gait problems are associated with a worse quality of life [35-37].

Another significant aspect of the relationships observed between the quality-of-life scales and the AMPS is the significant relationship between items involving bodily discomfort and the motor section of this scale. Pain is one of the non-motor symptoms most strongly related to loss of quality of life in PD patients [33]. This relationship with motor skills suggests that pain modifies or worsens the quality of movement and increases the effort required to perform activities of daily living in PD patients, as discussed by Rana et al [38].

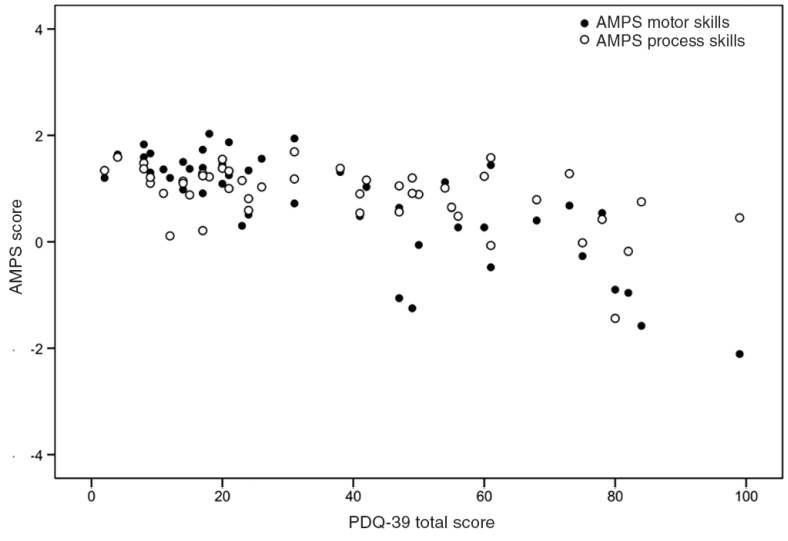
In our study, relationships were found between the deterioration of motor and process skills scores and the emotional well-being dimension of the PDQ-39. The presence of depressive problems is one of the major determinants of health-related quality of life in PD subjects, and is associated with motor and process problems, and loss of functional capacity [39,40]. According to what was observed, the stage of the disease and UPDRS III had very similar relationships with what was found between the AMPS and the different aspects of HRQOL analyzed. The main associations that were established between the stage of the disease and UPDRS III were with respect to the global scores of both quality-of-life tools. In the case of the PDQ-39 dimensions, a close relationship was observed with mobility and with the activities of daily living domains, as well as with emotional well-being, bodily discomfort and, to a lesser extent, with the communication section. Similarly, there was a notable association between the stage of PD and the level of caregiver burden. For the UPDRS III, relationships were observed with mobility, activities of daily liv-

Table III. Correlations between AMPS motor and process skills with Parkinson's disease characteristics.

	HY			UPDRS III			AMPS motor skills			AMPS process skills		
	rho	CI	*p*	rho	CI	*p*	rho	CI	*p*	rho	CI	*p*
PDQ-39	0.8	0.67 to 0.88	< 0.001[a]	0.65	0.06 to 0.6	< 0.001[a]	−0.76	−0.86 to −0.61	< 0.001[a]	−0.51	−0.69 to −0.26	< 0.001[a]
Mobility	0.82	0.7 to 0.89	< 0.001[a]	0.62	0.39 to 0.76	< 0.001[a]	−0.74	−0.85 to −0.58	< 0.001[a]	−0.52	−0.69 to −0.28	< 0.001[a]
ADL	0.86	0.76 to 0.92	< 0.001[a]	0.58	0.36 to 0.75	< 0.001[a]	−0.74	−0.84 to −0.58	< 0.001[a]	−0.61	−0.76 to −0.39	< 0.001[a]
Emotional well-being	0.55	0.32 to 0.72	< 0.001[a]	0.42	0.15 to 0.62	0.003[a]	−0.42	−0.63 to −0.16	0.003[a]	−0.18	−0.44 to 0.1	0.02[a]
Stigma	0.18	−0.1 to 0.44	0.215	0.14	−0.14 to 0.41	0.327	−0.16	−0.42 to 0.13	0.272	−0.11	−0.38 to 0.17	0.451
Social support	0.26	0.02 to 0.5	0.071	0.42	0.15 to 0.63	0.002[a]	−0.26	−0.5 to 0.02	0.071	−0.24	−0.49 to 0.044	0.096
Cognition	0.18	−0.1 to 0.44	0.216	0.19	−0.09 to 0.45	0.192	−0.15	−0.41 to 0.13	0.303	−0.11	−0.38 to 0.17	0.45
Communication	0.29	0.001 to 0.53	0.041[a]	0.41	0.14 to 0.62	0.003[a]	−0.28	−0.52 to 0.001	0.051	−0.29	−0.53 to −0.009	0.043[a]
Bodily discomfort	0.53	0.29 to 0.71	< 0.001[a]	0.57	0.34 to 0.73	< 0.001[a]	−0.58	−0.74 to −0.36	< 0.001[a]	−0.24	−0.49 to −0.04	0.09
EQ-5D total	−0.80	−0.88 to −0.67	< 0.001[a]	0.63	0.43 to 0.78	< 0.001[a]	0.72	0.55 to 0.83	< 0.001[a]	0.53	0.29 to 0.71	< 0.001[a]
EQ-5D VAS	−0.44	−0.64 to −0.18	0.002[a]	-0.38	−0.59 to 0.1	0.008[a]	0.4	0.13 to 0.61	0.004[a]	0.44	0.18 to 0.64	0.002[a]
ZCBI	0.41	0.15 to 0.62	0.007[a]	0.4	0.11 to 0.63	0.009[a]	0.34	0.06 to 0.5	0.026[a]	0.15	−0.14 to 0.41	0.33

ADL: activities of daily living; AMPS: Assessment of Motor and Process Skills; CI: confidence interval; EQ-5D total: EuroQol total score; EQ-5D VAS: EuroQol visual analogue scale; HY: Hoehn and Yahr scale; PDQ-39: Parkinson Disease Questionnaire; UPDRS III: motor section of the Unified Parkinson's Disease Rating Scale; ZCBI: Zarit Caregiver Burden Interview. [a] $p < 0.05$.

Figure. Correlations between AMPS and PDQ-39. AMPS: Assessment of Motor and Process Skills; PDQ-39: Parkinson Disease Questionnaire.



ing, emotional well-being, social support, communication, and bodily discomfort of the PDQ-39. Also, there were associations between the UPDRS III and the EQ-5D total score and the percentage of perceived health. Similarly, there was a moderate association between the UPDRS III and the level of caregiver burden.

A relationship was observed between the AMPS scale and the level of caregiver burden according to the ZCBI scale. In fact, there was only a weak relationship between the loss of motor skills and the presence of caregiver burden for the caregivers of the PD subjects analysed. This relationship between motor problems and increased caregiver burden has already been observed in several previous studies [41]. Both motor impairments and the consequent decrease in the ability to perform activities of daily living throughout the course of the disease are two of the most common factors related to increased caregiver burden and loss of quality of life. Other factors related to caregiver burden and observed in other studies are motor complications and the presence of falls [42].

This study presents several limitations. In the first place, a small sample was recruited, therefore our findings must be interpreted with caution. Furthermore, this study did not explore all stages of PD (I and V), therefore the results may not apply to all the phases of the disease. Finally, we did not perform a more profound examination of the cognitive functions, which may have helped understand more about the decline of process skills in individuals without dementia affected by PD.

Conclusions

The decrease in AMPS scale scores is highly correlated with the loss of quality of life in PD patients, especially in the mobility and activities of daily living domains of the PDQ-39 questionnaire, and with the overall EQ-5D score. Decreased scores on the AMPS scale in its motor skills section were related to increased PD caregiver burden, but not for process skills. Future studies should be conducted employing these relationships showed between the AMPS scale and the quality-of-life questionnaires and the caregiver burden scale under a treatment context.

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Habilidades de desempeño ocupacional en la enfermedad de Parkinson: relación con la calidad de vida relacionada con la salud y la carga del cuidador

Introducción. La progresión de la enfermedad de Parkinson (EP) da lugar a una pérdida de la capacidad para realizar actividades de la vida diaria y de la calidad de vida relacionada con la salud. Los objetivos de este estudio fueron establecer las relaciones entre las habilidades de desempeño ocupacional y la calidad de vida relacionada con la salud, y el grado de carga del cuidador en pacientes con EP.

Pacientes y métodos. Participaron en el estudio 49 sujetos en diferentes estadios de EP según la escala de Hoehn y Yahr. Los pacientes fueron evaluados usando el cuestionario de la enfermedad de Parkinson (PDQ-39), el EuroQoL (EQ-5D), la evaluación de las habilidades motoras y de procesamiento (AMPS), y la entrevista de Zarit sobre la carga del cuidador (ZCBI).

Resultados. Se encontraron fuertes correlaciones entre la sección de habilidades motoras de la AMPS y el PDQ-39 (r = –0,76; p = 0,001), y los cuestionarios EQ-5D (r = 0,72; p = 0,001), mientras que se encontraron correlaciones moderadas con las habilidades de procesamiento. Las habilidades de procesamiento de la AMPS se correlacionaron moderadamente con la movilidad y las actividades de la vida diaria. La ZCBI sólo se correlacionó débilmente con las habilidades motoras de la AMPS (r = –0,34; p = 0,02).

Conclusión. Las puntuaciones decrecientes en la AMPS están estrechamente relacionadas con la pérdida de calidad de vida relacionada con la salud en pacientes con EP y, en menor medida, con el grado de carga del cuidador.

Palabras clave. Actividades de la vida diaria. Calidad de vida relacionada con la salud. Enfermedad de Parkinson. Evaluación de habilidades motoras y de procesamiento. Funcionalidad. Sobrecarga del cuidador.